



Early View

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Lung function & cardiovascular disease. A Two Sample Mendelian Randomization Study

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Short title: MR study of lung function effects on risk of cardiovascular disease

Abstract

Background

Observational studies suggest an association between reduced lung function and risk of coronary artery disease and ischaemic stroke, independent of shared cardiovascular risk factors such as cigarette smoking. We use the latest genetic epidemiological methods to determine if impaired lung function is causally associated with an increased risk of cardiovascular disease.

Methods and Findings

Mendelian Randomization uses genetic variants as instrumental variables to investigate causation. Preliminary analysis used two sample Mendelian Randomization with lung function single nucleotide polymorphisms. To avoid collider bias the main analysis used single nucleotide polymorphisms for lung function identified from UKBiobank in a Multivariable Mendelian Randomization model conditioning for height, body mass index and smoking.

Multivariable Mendelian Randomization shows strong evidence that reduced FVC causes increased risk of coronary artery disease, Odds Ratio: 1·32 (1·19-1·46) per Standard Deviation. Reduced FEV₁ is unlikely to be cause increased risk of coronary artery disease as evidence of its effect becomes weak after conditioning for height 1·08 (0·89, 1·30). There is weak evidence that reduced lung function increases risk of ischaemic stroke.

Conclusion

There is strong evidence that reduced FVC is independently and causally associated with coronary artery disease. Although the mechanism remains unclear, FVC could be taken into consideration when assessing cardiovascular risk and considered a potential target for reducing cardiovascular events. FEV₁ and airflow obstruction do not appear to cause increased cardiovascular events, confounding and collider bias may explain previous findings of a causal association.

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Introduction

Multi-morbidity, the co-existence of multiple diseases in an individual, is associated with poor quality of life, mortality and polypharmacy.[1] Impaired lung function measures such as Forced Expiratory Volume in one second (FEV₁) and Forced Expiratory Volume (FVC) have been found to be strongly associated with multi-morbidity and are reported as independent predictors of cardiovascular disease.[2] Although research has often focused on the contribution of FEV₁ and obstructive airways disease to cardiovascular risk, FVC has been shown to be a stronger predictor of survival, and appears to add value to the Framingham Risk Score for prediction of mortality.[3, 4] However, it is unclear if there is a causal link between lung function and multi-morbidity or if the association is due to confounding factors such as cigarette smoking.

Observational studies have reported that Chronic Obstructive Pulmonary Disease (COPD), decreased FEV₁, FVC and FEV₁/FVC ratio are all associated with an increased the risk of coronary artery disease.[5, 6] However results are inconsistent, with some studies reporting no association,[7] or that the association is limited to those with abnormally high blood pressure.[8] There is also evidence suggesting that COPD and impaired lung function are associated with an increased risk of stroke.[9]

Impaired lung function and associated lung diseases could have a direct detrimental effect on cardiovascular health via a number of biological pathways including systemic inflammation or oxidative stress.[10, 11] However the mechanisms may vary between different lung function traits.[12]

Mendelian Randomization (MR) is a method which can overcome problems of unmeasured confounding and reverse causation typical of conventional observational epidemiology.[13] MR allows causal inference through the use of genetic variants as proxies for modifiable risk factors or health outcomes.[14] MR uses genetic data, e.g. single nucleotide polymorphisms (SNPs) that are associated with an exposure (in this case lung function), as instrumental variables (IV) to assess the causal effect of the exposure on the outcome of interest (in this case cardiovascular disease).[15]

MR has multiple advantages, it uses genetic variants which are randomly allocated at conception so they can be exploited to simulate randomisation.[15] Genetic variants are not influenced by behavioural or environmental factors and are far less susceptible to bias from reverse causation. Additionally, the effects are equivalent to lifetime differences, reducing issues relating to transient fluctuations in exposures.[16] Multivariable MR (MVMR) has further advantages, it includes multiple exposures in the model allowing estimation of the direct causal effect of each exposure on the outcome. Each exposure SNP has its effect on all exposures e.g. lung function (LF) trait and height included in the MR model allowing for conditioning. MVMR is a robust method when using two exposures that could act as a confounder, mediator or collider of the exposure-outcome relationship.[17, 18] Our objective was to determine if impaired lung function causally increases the risk of cardiovascular disease.

Methods

Exposures – Shrine et al preliminary analysis [19]

We used data from the largest currently available lung function GWAS, by Shrine et al to undertake a preliminary 2 sample Mendelian Randomization analysis. The Shrine et al

GWAS reported 279 genome wide significant SNPs ($p < 5 \times 10^{-9}$) in European ancestry population and was adjusted for age, age², height, smoking status. Full details are provided elsewhere.[19]

Given that the Shrine et al GWAS adjusted for covariates of lung function and cardiovascular disease e.g. height and smoking, this can lead to collider bias as SNPs can be related to both the covariates e.g. height and to other adverse risk factors.[16] This can lead to false positive SNP discoveries and bias (towards null effect) in MR studies.[20]

Exposures – Main analysis MVMR

To avoid the collider bias we used exposure SNPs discovered in GWAS that had not been adjusted for covariates in an MVMR model. To find suitable exposure SNPs we used the UKBiobank, of 502,543 individuals aged between 40 and 69 at recruitment across the UK.^[21] Participants completed detailed health questionnaires and blood samples were taken for genotyping. Of these 353,315 participants have “best measures” of pre-bronchodilator FEV₁ and FVC, measured as absolute values in litres. We performed a GWAS on these individuals (adjusting for sex). We also performed a GWAS based on 55,907 cases of airflow obstruction (defined as $\text{FEV}_1/\text{FVC} < 0.70$) and 297,408 controls ($\text{FEV}_1/\text{FVC} \geq 0.70$). The SNPs discovered in this unadjusted GWAS were then used in a two-sample MVMR model conditioning with SNPs for covariates of exposure and outcome: standing height, body mass index (BMI) and current smoking. SNPs for these covariates were identified in pre-existing GWAS performed in the UKBiobank.[22] See online supplement for details. NB. Genetic variants function is independent of age and adjusting for it in a two sample MR model is not necessary or possible (as age is not genetically determined). All exposure SNPs were discovered in only European ancestry populations.

Outcomes

We used CARDIOGRAMplusC4D GWAS based on 60,901 cases of coronary artery disease and 123,504 controls, 77% of whom were of European ancestry.[23] Coronary artery disease was defined by myocardial infarction, acute coronary syndrome, chronic stable angina or coronary stenosis of >50%.

For stroke we used MEGASTROKE GWAS based on 34,217 cases of acute ischaemic stroke and 406,111 controls, all of European ancestry.[24] There was no overlap between our exposure and outcome population samples.

Statistical Analysis

Statistical analysis was done using R Studio version 3.6.1 with MRCIEU/TwoSampleMR and MRInstruments packages.[17, 25]

F-statistics were calculated to assess exposure instruments strength.[26] Linkage disequilibrium clumping (LD-clumping) and Steiger filtering were performed.[25] Duplicate SNPs and palindromic SNPs were removed, and all SNPs were harmonised. Proxies were identified when CAD was the outcome. See appendix 3 for more details.

Main Mendelian Randomization Analysis

Inverse Variance Weighting (IVW) was used for main effect estimate for both MVMR and 2S-MR analyses. This IVW is a weighted regression of SNP-outcome on SNP-exposure associations combined.

Results

Shrine et al preliminary analysis

Due to collider bias, results from this analysis should be interpreted with caution. When adjusting for a covariate the effect estimate of the SNP with lung function will be biased by the correlation between the covariate and lung function multiplied by their association with covariate. For example, if a SNP has a strong positive effect on height it would reduce the observed effect on lung function. Adjusting for a covariate in a GWAS could induce an association between SNPs associated with the covariate and the adjusted trait that is inverse to the true association between each SNP and the covariate.[20] This bias in the SNP-exposure association will feed through to any MR estimates obtained using it and could lead to bias in the MR estimates obtained, either towards or away from the null. The implications for MR estimates from covariate adjusted GWAS are explained in detail elsewhere. [27]. Please see appendix 8 for directed acyclic graph and further detail.

All analysis showed weak evidence of an effect, variable direction of effect and wide confidence intervals. These results are reported in further detail in the supplementary information. We proceeded with MVMR as our main analysis as a more robust method able to account for collider bias.

MVMR

Using a threshold of $p < 5 \times 10^{-8}$, after quality control and LD-clumping the unadjusted GWAS of lung function in UKBiobank produced 360 SNPs for FEV₁, 464 SNPs for FVC and 154 SNPs for FEV₁/FVC < 0.70 explaining 3.6%, 4.8% and 0.9% of variance respectively. F-statistic for FEV₁ = 38, FVC = 40 and Ratio < 0.7 = 36. For covariates, F-statistic for standing height, BMI and current smoking were 50, 39 and 32 respectively.

MVMR analysis – FEV₁ and FVC as exposure, CAD as outcome

Results are presented as per SD decrease in lung function trait. Analysis showed strong evidence of an increased risk of CAD per SD decrease in FVC (OR: 1.32 per SD; 95% CI: 1.19-1.46) as shown in **Table 1**. This effect did not attenuate after conditioning for BMI (1.41; 1.25-1.59) or current smoking (1.32; 1.19-1.47) but was weaker after conditioning for height (OR: 1.11; 1.03-1.24).

Table 1. Multivariable MR results of FEV₁ and FVC on Coronary Artery Disease and Ischaemic Stroke using UKBiobank lung function GWAS

Lung function trait	Condition	No. SNPs (LF/condition)	OR (95% CI)* for Coronary Artery Disease	No. SNPs (LF/condition)	OR (95% CI)* for Ischaemic Stroke
FEV ₁	Nil	300/Nil	1.27 (1.12, 1.44)	291/Nil	1.11 (0.97-1.26)
FEV ₁	Height	194/744	1.08 (0.89, 1.30)	193/741	1.01 (0.83, 1.22)
FEV ₁	BMI	179/645	1.26 (1.08, 1.47)	185/660	1.03 (0.88, 1.20)
FEV ₁	Smoking	274/15	1.26 (1.10, 1.44)	273/12	1.11 (0.95, 1.29)
FVC	Nil	391/Nil	1.32 (1.19-1.46)	384/Nil	1.12 (1.01-1.24)
FVC	Height	272/726	1.22 (1.03, 1.44)	273/728	1.04 (0.88, 1.24)
FVC	BMI	227/599	1.41 (1.25, 1.59)	227/607	1.05 (0.93, 1.19)
FVC	Smoking	359/15	1.32 (1.19, 1.47)	368/11	1.11 (1.00, 1.23)

*per SD decrease in lung function trait

OR – Odds Ratio. 95% CI – 95% Confidence Interval. LF – Lung Function

Prior to any conditioning, there was evidence that reduced FEV₁ increases risk of CAD (OR: 1.27 per SD; 95% CI: 1.12-1.44). However, when conditioning for height the effect size decreases with widening of the confidence interval which cross 1.0 (1.08; 0.89-1.30) **Table 1**.

This is probably due to the pleiotropy in the MR analysis as the unadjusted GWAS would have discovered SNPs that affected LF via height. Therefore, there is limited evidence of a direct effect of FEV₁ on cardiovascular risk. Conditioning for BMI (1·26; 1·08-1·47) and current smoking (1·26; 1·10-1·44) made minimal difference to the estimated effect.

MVMR analysis – FEV₁ and FVC as exposure, ischaemic stroke as outcome

There is little evidence to suggest that reduced FEV₁ increases the risk of ischaemic stroke (OR: 1·11 per SD; 95% CI: 0·97-1·26) **Table 1**. The magnitude decreased further when conditioning for both height and BMI, although the direction remained consistent. There is evidence that a decrease in FVC increases risk of ischaemic stroke (1·23; 1·01-1·24) but the effect size and strength of evidence attenuates after conditioning for height or BMI (1·16; 0·98-1·38 and 1·05; 0·93-1·19 respectively). Results for effects of FEV₁ and FVC on CAD and ischaemic stroke after conditioning for all covariates together are in supplementary information appendix 4.

MVMR analysis – FEV₁/FVC ratio <0·7 as exposure, CAD and ischaemic stroke as outcomes

Steiger filtering removed 87 SNPs for FEV₁/FVC ratio <0·7 with CAD as the outcome and 96 SNPs with ischaemic stroke as the outcome. We found very little evidence of an effect of liability to airflow obstruction on CVD as can be seen in **Table 2**.

Table 2. Multivariable MR results of and FEV₁/FVC <0·7 on Coronary Artery Disease and Ischaemic Stroke using UKBiobank lung function GWAS

Trait	Condition upon	No SNPs (LF/condition)	OR (95% CI)* for Coronary	No. SNPs (LF/condition)	OR (95% CI)* for Ischaemic
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			Artery Disease		Stroke
FEV1/FVC <0.7	Nil	50/Nil	1.00 (0.60, 1.67)	39/Nil	0.96 (0.52, 1.79)
FEV1/FVC <0.7	Smoking	49/17	1.00 (0.83, 1.21)	38/13	0.98 (0.82, 1.16)

*per SD increase in liability to ratio <0.7

Discussion

This MVMR study provides evidence that a one standard deviation reduction in FVC *causes* approximately a 20% increased risk of CAD. This finding confirms causality of previous observational associations.[5, 6] These results are unlikely to be affected by reverse causation or confounding factors due to the use of SNPs as instrumental variables. This effect was not seen in the preliminary non-MVMR analysis because of collider bias introduced to the model by covariate adjustment in the Shrine et al discovery GWAS. Our main analysis used MVMR which is a robust tool when a secondary exposure acts as a confounder, a mediator, a pleiotropic pathway and a collider.[28]

Although historically, most observational studies of cardiovascular morbidity have focused on FEV₁ and COPD, we found little evidence of a causal association between FEV₁ and liability to obstructive ratio on CVD risk. These results mirror findings that FVC is stronger predictor of overall survival than FEV₁.[3] Our findings suggests that the observed association between low FEV₁, obstruction and increased risk of CVD is unlikely to be causal. In healthy individuals, FEV₁ and FVC are highly correlated. Therefore, we hypothesise that the unknown underlying biological mechanism linking lung function and cardiovascular disease may be specific to FVC reduction.

Finding modifiable risk factors for CAD is important, however the majority of therapies designed to improve lung function (such as inhaled bronchodilators) have a temporary and limited impact on FVC and so are unlikely to be sufficient to modify cardiovascular risk. Available treatments which do target decline in FVC are for specific and rare lung disease such as pulmonary fibrosis.[29]

There are a number of strengths to our study, first it utilises large numbers of instrumental variables, far more than were available in previous MR studies.[30] Second we used a huge exposure sample population and multiple robust methods and adhered to rigorous proposed STROBE guidelines for MR papers.[31]. By using MR we accounted for unmeasured confounding and reverse causation, problems typical of conventional observational epidemiology and establish causality by the use of randomly assigned genetic instrumental variables.[13, 32, 33] In addition, our study benefited from using MVMR to condition for these covariates avoiding collider bias that could have contributed to the weak evidence found in our preliminary analysis using the Shrine et al GWAS.[19] MVMR estimates the direct, rather than total effect of an exposure allowing us to show that much of the effect of FEV₁ on CAD risk was due to pleiotropic SNPs affecting FEV₁ via height (an established determinant of cardiovascular risk). Finally, this is the first study to use SNPs for FEV₁/FVC <0·7 ratio.

MR has assumptions and is vulnerable to certain biases if not used properly. The sensitivity analysis using plots, MR Egger, weighted median and mode did not indicate any violation of assumptions. The use of Steiger filtering reduces the risk of reverse causality.

Limitations

Our exposure GWAS and the MEGASTROKE used only those of European heritage. The CARDIOGRAMplusC4D GWAS was 23% non-European heritage. LF SNPs discovered in European ancestral populations in the Shrine GWAS have been shown to have a smaller effect in non-European populations.[19] As our own UKBiobank GWASs used a high

proportion of the same sample examining similar traits, it is likely that in a non-European population the effects would be smaller. We did not have access to another sample population to estimate the effects of SNPs discovered in our GWAS. As our SNPs were discovered and effects estimated in the same population, the effects could have been over estimated due to “Winner’s Curse” phenomena.[34] There was a reduction in number of instruments available for analysis following LD-clumping, removal of duplicates, and extraction from exposure and outcome GWAS. This reduces the strength of the instruments which may have reduced the power to show an effect of FEV_1 or $\text{FEV}_1/\text{FVC} < 0.7$ ratio. In our MVMR analysis we used $\text{FEV}_1/\text{FVC} < 0.7$ ratio as an exposure because this is a commonly used, threshold of obstructive lung function. Using FEV_1/FVC ratio as a continuous trait has inherent issues in MR analysis. High FEV_1/FVC ratio is a sign of restriction and low FEV_1/FVC ratio defines airflow obstruction, both of which are pathological states that could affect cardiovascular disease, making interpretation of the continuous variable challenging. Most MR analysis assumes a linear effect, which would be violated when using FEV_1/FVC as a continuous trait. Dichotomization of continuous traits in MR studies can make interpretation of the causal estimate less reliable, but MR can still be a valid test of the causal null hypothesis for a binary exposure.[35] An assumption of MR is that SNPs only affect the outcome via the exposure. To ensure that our SNPs were not affecting our outcomes via amount smoked we checked to see if any of our lung function SNPs are found in the 15q25 locus.[36] In the MVMR analysis for FEV_1 only one SNP (rs72736802) is from the locus, none from the FVC analysis. Therefore, we do not think this will affect our results. Lung function is a complex trait and SNPs affect LF via differing pathological processes.[19] The differing processes may vary in their impact on the risk of co-morbidities, perhaps reflected in the assessments of heterogeneity. It is possible our study was limited by the number of ischaemic stroke cases in

the outcome population. If there is a causal effect of lung function on ischaemic stroke, it is likely to only occur with large changes in lung function as seen with CAD.

Implications

There are several important implications of our findings, first is that it is Forced Vital Capacity not obstructive lung function that is causally associated with coronary artery disease. This suggests that we should focus our attention on understanding the mechanisms by which FVC causes CAD. Second given, there are limited FVC specific therapies, it is most likely that future interventions to improve CAD outcomes through modifying FVC are most likely to be achieved through environmental/ behavioural public health interventions designed to achieve optimal lung development and preventing lung function decline. Third, FVC is a widely and routinely collected clinical measure (spirometry), this study supports the call for FVC measurements to be evaluated as part of cardiovascular prognostication / secondary prevention risk assessments.

It remains uncertain if lung function has a causal effect on the risk of ischaemic stroke. Our MVMR models show very little weak evidence that reduced lung function increases the risk of ischaemic stroke. Larger outcome sample sizes may become available as genetic consortia grow which could provide more conclusive results. Future studies are needed to determine the mechanism by which FVC causes increased coronary artery disease.

Conclusions

There is strong evidence that reduced Forced Vital Capacity (FVC) is independently and causally associated with Coronary Artery Disease. Although the mechanism remains unclear, FVC may play an important contribution to the assessment of cardiovascular risk. Further studies are needed to test whether interventions to improve or maintain FVC may also modify cardiovascular risk. FEV₁ and Obstructive lung function do not appear to cause increased

cardiovascular events, confounding and collider bias may explain previous observational and MR findings of a causal association.

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Online Data Supplement

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Appendix 1. Details of our exposure GWAS conducted in UK Biobank

UKBiobank population and recruitment has been described in detail elsewhere.[2, 3]

We used all individuals with valid genotype and results for the traits of interest. We did not look for or exclude those with specific underlying diseases. Interstitial lung disease is very unlikely to affect these results. Interstitial lung diseases are rare affecting <0.01% of UK adults (<https://statistics.blf.org.uk/lung-disease-uk-big-picture>). Within UKBiobank only 108 people are known to have idiopathic pulmonary fibrosis, of which 61 are receiving treatment. 1,768 people in UKBiobank report doctor diagnosed COPD, of which 1,277 are on treatment. As our sample size was >300,000 such small numbers will not skew the results.

Although not specifically tested, we do not believe there is any cross over between our exposure and outcome populations. All analysis was performed using BOLT LMM using the IEU GWAS pipeline. This uses a linear mixed model (LMM) to account for both relatedness and population stratification, therefore allowing a wider range of individuals to be included. Only participants of European ancestry are used. A subset of 143,006 SNPs included in the model are directly genotyped. SNPs included are all meet the criteria:

Mean Allele Frequency >0.01

Genotyping rate >0.015

Hardy-Weinberg equilibrium p-value<0.0001

R² threshold of 0.1

For full details please see references.[4-6]

Forced Expiratory Volume in one second (FEV₁)

GWAS performed on 345,590 participants.

Quantitative trait that was measured as litres to three decimal places.

Mean FEV₁ = 2.853 (std = 0.780)

Estimated proportion of variance explained using inf model: 0.036

12,321,875 imputed SNPs in GWAS

44,522 SNPs reached significance at threshold of P_BOLT_LMM_INF < 5x10⁻⁸

360 SNPs remained after LD-clumping

When using for CAD;

41 proxies used

1 SNP removed due to incompatible alleles

7 SNPs removed as palindromic with intermediate allele frequencies

22 SNPs removed due to Steiger filtering

Leaving 307 SNPs available for analysis

When using for ischaemic stroke;

1 SNP removed for incompatible alleles

5 SNPs removed for being palindromic with intermediate allele frequencies

22 SNPs removed due Steiger filtering

Leaving 297 SNPs available for analysis

Forced Vital Capacity (FVC)

GWAS performed on 345,590 participants

Quantitative trait that was measured as litres to three decimal places.

Mean FVC = 3.782 (std = 0.985)

Estimated proportion of variance explained using inf model: 0.048

12,321,875 SNPs imputed SNPs in GWAS

58,873 SNPs reached significance at threshold of P_BOLT_LMM_INF < 5x10⁻⁸

464 SNPs remained after LD-clumping

When using for CAD;

60 Proxy SNPs found

15 SNPs removed for being palindromic with intermediate allele frequencies

14 SNPs removed due Steiger filtering

Leaving 406 SNPs available for analysis

When using for ischaemic stroke;

12 SNPs removed for being palindromic with intermediate allele frequencies

11 SNPs removed due Steiger filtering

Leaving 396 SNPs available for analysis

FEV₁/FVC <0.7

Binary trait that was measured the result of the ratio of FEV₁ and FVC. Recorded to two decimal places.

GWAS performed on 55,907 cases of FEV₁/FVC <0.7 with 297,408 controls (FEV₁/FVC \geq 0.7)

Mean FEV₁/FVC 0.64 of cases. (SD 0.065)

Controls had mean ratio 0.77 (SD 0.03)

Estimated proportion of pseudo-variance explained using inf model: 0.009

12,321,875 SNPs imputed in GWAS

16,036 SNPs reached significance at threshold of P_BOLT_LMM_INF $<5 \times 10^{-8}$

154 SNPs remained after LD-clumping

Range beta: -0.0188677 to 0.0270580

When using for CAD;

18 proxies found

4 SNPs removed as palindromic with intermediate allele frequencies

88 removed due Steiger filtering

Leaving 52 SNPs available for analysis

When using for ischaemic stroke;

3 SNPs removed for being palindromic with intermediate allele frequencies

56 removed due Steiger filtering

Leaving 40 SNPs available for analysis

Appendix 2. Details of the UK Biobank GWAS we used for covariates

All covariate GWAS were conducted by our colleagues at the IEU prior to this analysis being conducted. All are freely available on MRBase and at the IEU repository.[7, 8] Although not specifically tested, we do not believe there is any cross over between our exposure and outcome populations.

Height

Standing height of 461950 UKBiobank participants was used. The GWAS was performed in 2018.[8]

Quantitative trait recorded as centimetres.

9851866 SNPs imputed in GWAS

241226 reached significance at threshold of P_BOLT_LMM_INF $<5 \times 10^{-8}$

990 SNPs remained after LD-clumping and removing a duplicate

When using for outcome CAD;

26 SNP proxies were found.

20 SNPs were removed for being palindromic with intermediate allele frequencies.

45 SNPs were removed due Steiger filtering for CAD.

908 SNPs available for analysis

per 1 SD decrease in height IVW OR: 1.19; 95% CI: 1.11-1.28, of CAD.

When using for outcome ischaemic stroke;
17 SNPs removed for being palindromic with intermediate allele frequencies.
62 SNPs were removed due Steiger filtering for ischaemic stroke.
892 SNPs available for analysis
per 1 SD decrease in height IVW OR: 1.02; 95% CI: 0.94-1.09, of ischaemic stroke.

BMI

BMI of 461460 UKBiobank participants was used. The GWAS was performed in 2018.[8]
Quantitative trait recorded as Kg/m²
9851866 SNPs imputed in GWAS
68945 SNPs reached significance at threshold of P_BOLT_LMM_INF < 5x10⁻⁸
799 SNPs remained after LD-clumping

When using for outcome CAD;
32 SNPs were removed for being palindromic with intermediate allele frequencies.
8 SNPs were removed due Steiger filtering.
760 SNPs available for analysis
per 1 SD decrease in BMI IVW OR: 0.66; 95% CI: 0.62-0.71, risk CAD.

When using for outcome ischaemic stroke;
28 SNPs removed for being palindromic with intermediate allele frequencies.
6 SNPs were removed due Steiger filtering.
770 SNPs available for analysis
per 1 SD decrease in BMI IVW OR: 0.83; 95% CI: 0.78-0.89, risk ischaemic stroke.

Current Smoking

Current smoking of 462434 UKBiobank participants was used. The GWAS was performed in 2018.[8]
Ordered categorical trait. We do not know exactly how many cases and controls this involved, but more recent UKBIOBANK figures show that there are 55666 current smokers, 197787 previous smokers, and 317645 never smokers. The GWAS we used is highly likely to reflect very similar proportions.

9851867 SNPs imputed in GWAS
1949 SNPs reached significance at threshold of P_BOLT_LMM_INF < 5x10⁻⁸
37 SNPs remained after LD-clumping

When using for CAD;
1 SNP removed for being palindromic with intermediate allele frequencies.
18 SNPs were removed due Steiger filtering.
17 SNPs available for analysis
per 1 SD decrease in current smoking IVW OR: 0.61; 95% CI: 0.30-1.23, risk CAD.

When using for ischaemic stroke;
1 SNP removed for being palindromic with intermediate allele frequencies
22 SNPs were removed due Steiger filtering.

13 SNPs available for analysis

per 1 SD decrease in current smoking IVW OR: 1·00; 95% CI: 0·42-2·39, risk ischaemic stroke.

Appendix 3. Details of methods; F-statistic calculation, Steiger filtering, Palindromic SNPs and harmonisation. MR assumptions and explanation of sensitivity test

Details of method

For all exposure traits Cragg-Donald overall F-statistic was calculated.[9] The higher the F-statistic the lower the chance of weak instrument bias.[9] SNPs in close proximity may represent the same signal. Therefore, Linkage Disequilibrium-clumping (LD-clumping) was performed on all exposure SNPs. This retains the SNP with the most significant association at each locus ($kb = 10000$, $r^2 < 0.001$). Steiger filtering was performed to remove variants that caused more variance of the outcome than the exposure. [10] Steiger filtering estimates each SNP's rsq.exposure and rsq.outcome in the outcome population.[10] Those SNPs that explain more variance in the outcome than exposure are excluded, as they could lead to a reverse causal relationship. SNPs were removed if they explained more variance of the outcome than the exposure.

For MVMR the LD-clumped and Steiger filtered SNPs for each lung function trait were combined with the LD-clumped and Steiger filtered SNPs for each covariate. The combined SNPs were then LD-clumped and duplicates removed. All SNPs had their beta effect extracted from both the lung function GWAS and the covariate GWAS to enable covariate conditioning.

For both the Shrine et al analysis and MVMR palindromic SNPs (i.e. A/T and C/G SNPs) with intermediate allele frequencies were excluded. The remaining SNPs were harmonised so that SNP-exposure and SNP-outcome effects corresponded to the same allele.[11] Proxies were identified for SNPs not found in outcome GWAS ($r^2 = 0.8$) for CAD, although this was not possible for stroke.

We assume that our instrumental variables (IV's) are associated with the exposure of interest. This assumption can be tested. We believe our IV's are strongly associated with the exposure given the stringent p-value threshold for significance. The Shrine et al [1] SNPs have gone through further testing in replication populations and have been tested via a polygenic risk score in multiple ancestry groups. The GWAS's for lung function traits that we performed ourselves showed they are responsible for a reasonable variation in the population. Our covariate GWAS's were performed to stringent p-value thresholds. F statistics for all exposures were above 10, reducing the chance of weak instrument bias.

Our second assumption is that our IV's influence our outcome only through the exposure. Our third assumption is that the IV's must not associate with measured or unmeasured confounding. These two hypotheses cannot be directly tested. However, we performed a number of tests in the 2SMR and MVMR models to reduce the risk the assumptions are violated. To account for the possibility of horizontal pleiotropy (IVs influence exposure and outcome through independent pathways) in our 2S-MR analysis, we performed MR Egger. MR-Egger is similar to IVW except the y intercept is unconstrained. If the y intercept of the MR-Egger is not equal to zero then either there is unbalanced horizontal pleiotropy (the average pleiotropic effect differs from zero) or the pleiotropic effects are independent from the genetic association with the risk factor, or both.[12] Although power is lower compared

to IVW, the gradient of the MR-Egger gives a causal estimate of the dose–response relationship between the genetic associations with the risk factor and those with the outcome, providing additional evidence for causal affect. MR-Egger method assumes that the Instrument Strength is Independent of the Direct Effect (InSIDE assumption), meaning that the SNPs pleiotropic effects are independent of their phenotypic effects.[13] For these reasons MR Egger is used as a sensitivity test rather than the main analysis. We used weighted median and mode MR methods to minimise the effect of unbalanced instruments on an overall estimate of the mean. A weighted median MR gives a consistent estimate of the causal effect when at least 50% of the weight comes from valid IVs, giving a greater robustness with strongly outlying causal estimates.[14] A weighted mode MR calculates an estimate based on the set of SNPs that form the largest homogenous cluster, which attempts to avoid the impact of invalid instruments.[15] As discussed in main paper results were consistent across sensitivity analyses demonstrating there is unlikely to be violation of assumptions.

We used a funnel plot to assess for horizontal pleiotropy by plotting the effect against its precision (beta against standard error).[7] A leave-one-out analysis was performed to ensure the results were not due to outliers with a large effect, by re-estimating the total effect after sequentially excluding one SNP at a time. Additionally, we performed a single-SNP analysis, where the effect of each SNP was individually assessed via IVW analysis and represented in a forest plot.

Heterogeneity (the variability in causal estimates obtained for each SNP) is an indication of potential violation of assumptions. This was calculated and assessed with a Q statistic.

Appendix 4. MVMR, conditioning for all covariates

We modelled effects of FEV₁ and FVC conditioning on all covariates. LD-clumped and Steiger filtered SNPs for every exposure trait were combined. The beta effect for each SNP was extracted from all exposure GWAS. SNPs not found in any of the exposure GWAS were removed. SNPs were LD-clumped ($kb = 10000$, $r^2 < 0.001$) and duplicates were removed. SNPs were extracted from outcome GWAS (proxies, $r^2 = 0.8$, used if not found for CAD). SNPs were harmonised and IVW effect estimate determined. As can be seen in Table S1, conditioning on all covariates shows similar results for FEV₁ and FVC effect on risk of ischaemic stroke. The estimated effect for FVC on risk of CAD (OR: 1.44 per SD; 95% CI: 1.18–1.76) and FEV₁ on CAD (OR: 1.28 per SD; 95% CI: 1.02–1.61) are in the same direction but higher than the estimate when just conditioning with height. This is likely due to weak covariate instruments for two reasons. Firstly, the covariates are conditioned by each other in the model. Secondly, there are less covariate SNPs available for analysis due to removal of duplicates, LD-clumping and SNPs not being found in other covariate GWAS.

Table 1. Multivariable MR results of and FEV₁ and FVC on Coronary Artery Disease and Ischaemic Stroke conditioning with all covariates

Lung function trait	Condition	No. SNPs (LF/Hight/BMI/ Smoking)	OR (95% CI)* for Coronary Artery Disease	No. SNPs (LF/condition)	OR (95% CI)* for Ischaemic Stroke
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FEV ₁	Height/BMI/Smoking	80/432/391/4	1·28 (1·02, 1·61)	85/440/413/3	1·18 (0·94, 1·48)
FVC	Height/BMI/Smoking	105/406/388/4	1·44 (1·18, 1·76)	102/408/399/3	1·05 (0·86, 1·29)

Appendix 5. Results from 2S-MR using Shrine et al[1]

Shrine et al analysis

F-statistic for Shrine et al [1] exposures were; All traits=111, FEV₁=69, FVC=70, FEV₁/FVC=148, making weak instrument bias unlikely. Results for effects on CAD are reported in **Table 1**. Effects are per SD decrease in lung function trait.

Shrine et al lung function SNPs as exposure, CAD as outcome

IVW showed no consistent effect of decreasing lung function traits on risk of CAD. As can be seen in **Table 1** the direction of effect differs between the lung function traits assessed and the evidence is weak with almost all confidence intervals crossing one. IVW showed decreasing FEV₁/FVC had a protective effect on CAD (OR: 0·90 per SD; 95% CI: 0·82-0·99), although evidence was weaker in the sensitivity analysis. This may indicate the importance of decreased FVC compared FEV₁ on risk of CAD. There was strong evidence of heterogeneity of effects based on the Q p-value, however visual inspection of graphs used for sensitivity testing did not show that the effect was driven by any outliers. See supplementary information, appendix 6.

Table 1. Two-sample MR results of lung function traits on coronary artery disease using Shrine et al [1] and CARDIOGRAMplusC4D et al [16]

No. SNPs used	Lung Function Trait (Exposure) effect on Coronary Artery Disease				
	FEV ₁ , FVC, FEV ₁ /FVC, PEF	FEV ₁	FVC	FEV ₁ /FVC	
		173	60	67	93
IVW	OR per SD (95% CI)	0.95 (0.88 – 1.04)	1.14 (0.94 – 1.37)	1.01 (0.86 – 1.18)	0.90 (0.82 – 0.99)
	Q_p-value*	3.7×10 ⁻¹⁷	3.07×10 ⁻⁸	3.12×10 ⁻⁶	1.1×10 ⁻⁶
Weighted	OR per SD	0.95	1.24	0.98	0.96
Median	(95% CI)	(0.86 – 1.05)	(1.01 – 1.53)	(0.82 – 1.16)	(0.85 – 1.07)
Weighted	OR per SD	0.92	0.80	0.93	0.96
Mode	(95% CI)	(0.78 – 1.08)	(0.43 – 1.05)	(0.66 – 1.31)	(0.81 – 1.15)
MR-	OR per SD	0.90	1.06	0.94	1.10
Egger	(95% CI)	(0.72 – 1.12)	(0.57 – 1.96)	(0.51 – 1.74)	(0.86 – 1.42)

* Heterogeneity test. If <0.05 it would suggest heterogeneity

OR – Odds ratio; CI – Confidence Interval; IVW – Inverse Variance Weighting

Shrine et al lung function SNPs as exposure, ischaemic stroke as outcome

Examining the effect of the Shrine [1] et al. SNPs on the risk of ischaemic stroke showed a consistent direction of effect using IVW, weighted median and weighted mode, with all traits showing decreased lung function increases risk of ischaemic stroke as shown in **Table 2**. However the evidence is weak given the confidence intervals. There was evidence of heterogeneity shown by the Q_p-values but plot sensitivity analysis did not suggest there were any outliers requiring removal from analysis. Sensitivity analysis using MR-Egger showed that for FEV₁ the direction of effect was showing a protective effect of reduced lung function (OR: 0.91 per SD; 95% CI: 0.55-1.49), however this test is of a lower statistical power as evidenced by the wide confidence interval.

Table 2. Two-sample MR results of lung function traits on ischaemic stroke using Shrine et al [1] and MEGASTROKE [16]

Lung Function Trait (Exposure) effect on Ischaemic Stroke					
No. SNPs used	FEV ₁ , FVC, FEV ₁ /FVC, PEF	FEV ₁	FVC	FEV ₁ /FVC	
	171	58	77	93	
IVW	OR per SD (95% CI) Q_p-value	1.05 (0.98 – 1.13) 2.2×10^{-5}	1.01 (0.87 – 1.18)	1.04 (0.91 – 1.19)	1.04 (0.95 – 1.13)
Weighted Median	OR per decrease SD (95% CI)	1.05 (0.95 – 1.64)	1.05 (0.87 – 1.28)	1.11 (0.93 – 1.32)	1.02 (0.91 – 1.14)
Weighted Mode	OR per SD (95% CI)	1.08 (0.93 – 1.26)	1.07 (0.77 - 1.51)	1.06 (0.77 – 1.46)	1.02 (0.85 – 1.12)
MR-Egger	OR per SD (95% CI)	1.13 (0.93 – 1.36)	0.91 (0.55 - 1.49)	1.47 (0.87 – 2.48)	1.05 (0.84 – 1.31)

OR – Odds ratio; CI – Confidence Interval; IVW – Inverse Variance Weighting

Appendix 6. Figures from 2SMR using Shrine et al [1]

Please note, our results in Tables 1-4 in the main article show effect per *decrease* in FVC. These figures are plotted as per *increase* in FVC.

Figure E1. Funnel plot of heterogeneity of causal effects of FVC using Shrine et al [1] on coronary artery disease

Each point is a SNP with its beta plotted against its inverse standard error. As the graph is funnel shaped, it indicates no heterogeneity.

Figure E2. Scatter plot of the SNP-effect on FVC using Shrine et al [1] and SNP-effect on coronary artery disease

Each point on the graph represents the SNP-outcome association plotted against the SNP-exposure association. Bars indicate 95% confidence intervals. Coloured lines represent analysis method used. This shows no effect of FVC on coronary artery disease. MR Egger intercept is close to zero indicating no unbalanced directional pleiotropy.

Figure E3. Leave-one-out analysis of FVC using Shrine et al [1] on coronary artery disease

Each point represents the IVW estimate if the SNP on the y axis was left out of total analysis. Bars indicate 95% confidence intervals, demonstrating that no individual SNP is driving the causal effect estimate.

Figure E4. Single SNP analysis of FVC using Shrine et al [1] on coronary artery disease

Each point represents individual SNP calculated effect size for FVC on the odds of coronary artery disease. Bars indicate 95% CI.

Figure E5. Funnel plot of heterogeneity of causal effects of FVC using Shrine et al [1] on ischaemic stroke

No evidence heterogeneity shown

Figure E6. Scatter plot of the SNP-effect on FVC using Shrine et al [1] and SNP-effect on ischaemic stroke

MR Egger line via close to zero, indicating no directional pleiotropy

Figure E7. Leave-one-out analysis of FVC using Shrine et al [1] on ischaemic stroke

No individual SNP driving causal estimate

Figure E8. Single SNP analysis of FVC using Shrine et al [1] on ischaemic stroke

Appendix 7. Data sharing

Shrine et all SNPs are available from the supplementary information of the reference.[1]

Summary statistics from our lung function GWAS performed in UKBIOBANK will be available on MRBase and IEU repository within 1 month of publication of this paper.[7, 8]

Summary statistics for the covariate GWAS are currently available on MRBase and IEU repository.[7, 8]

Summary statistics for CAD outcome are available on MRBase and from authors.[7, 16]

Summary statistics for ischaemic stroke are available for download here.[17]

Please contact the corresponding author for requests for code.

Appendix 8. Bias due to covariate adjustment in GWAS

Adjustment of covariates in GWAS has been shown to affect the SNP-exposure estimate leading to bias in MR studies. Figure E9 and legend explain some possible pathways. However, if there is residual confounding, covariate adjustment will bias the MR estimate for many different structures between exposure-covariate relationship. This reference explains in further detail.[18]

Figure E9. Directed acyclic graph demonstrating possible pathways leading to bias

Height is used in this example, but it would be true of other covariates, such as smoking.

SNP 1 does not have a direct effect on lung function. However, height and lung function have unmeasured common causes. Therefore, height is a collider of the path of SNP 1 and lung function ($\text{SNP 1} \rightarrow \text{Height} \leftarrow \text{Unmeasured common causes} \rightarrow \text{Lung function}$). Adjusting on a collider opens the path on the collider, which means that adjusting for height will wrongly identify SNP 1 as having a direct effect on lung function.

SNP 2 has a direct effect on lung function, but also an indirect effect via height. Adjusting for height will cause a biased estimate for the direct effect of SNP 2 on lung function (as it would be combination of the true direct effect and the bias from the collider adjustment).

To eliminate the collider bias induced by the covariate adjustment, the GWAS would need to also be adjusted for all unmeasured common causes, but this is impossible as they are unmeasured.

Appendix 9. Extended Acknowledgements

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As per request by the authors of the MEGASTROKE project we list all of their names here.
To view their affiliations please see link <http://megastroke.org/authors.html>.

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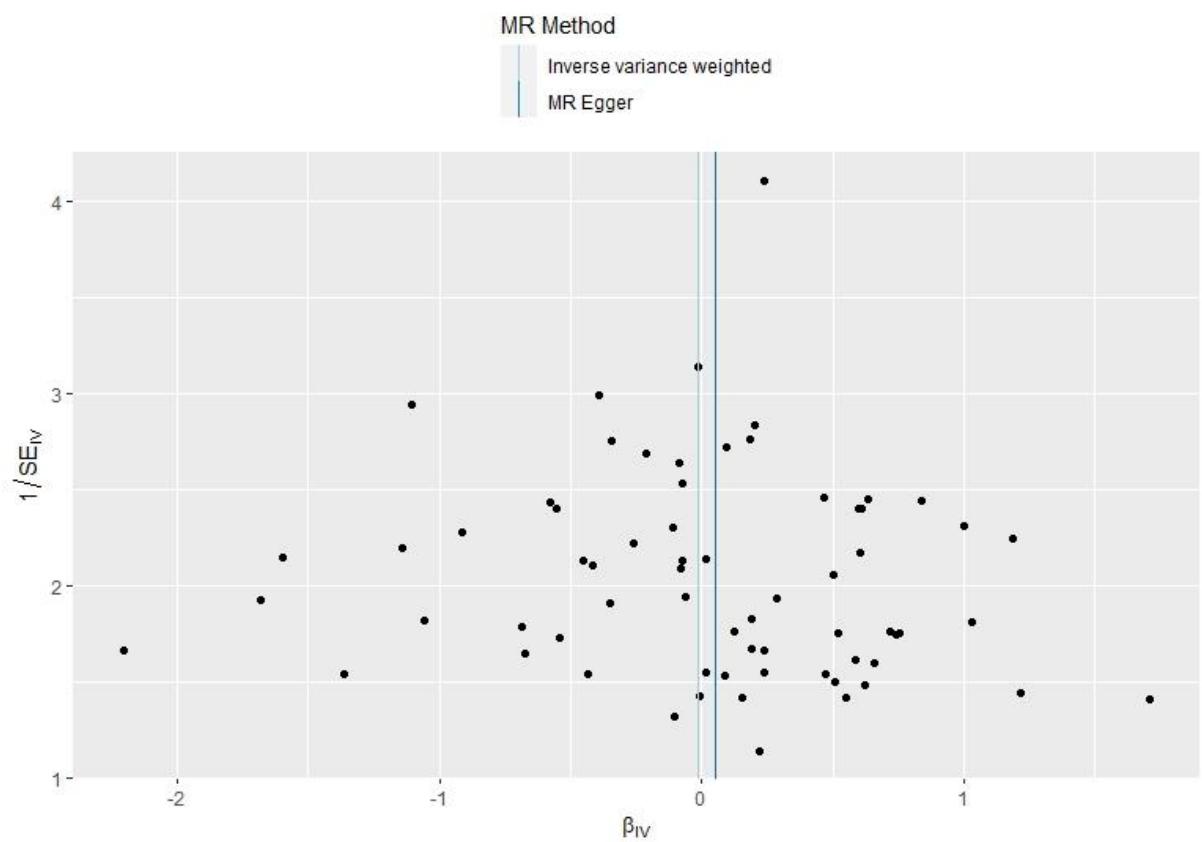
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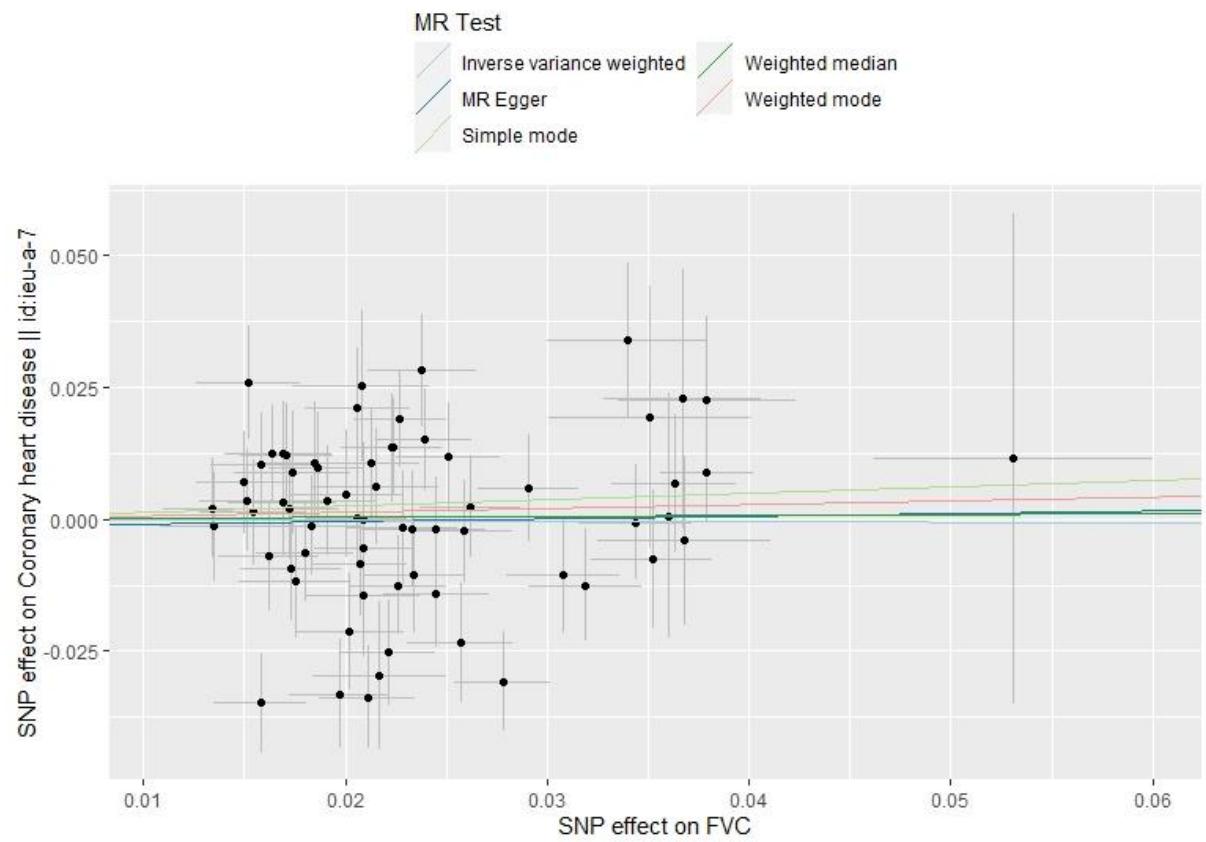
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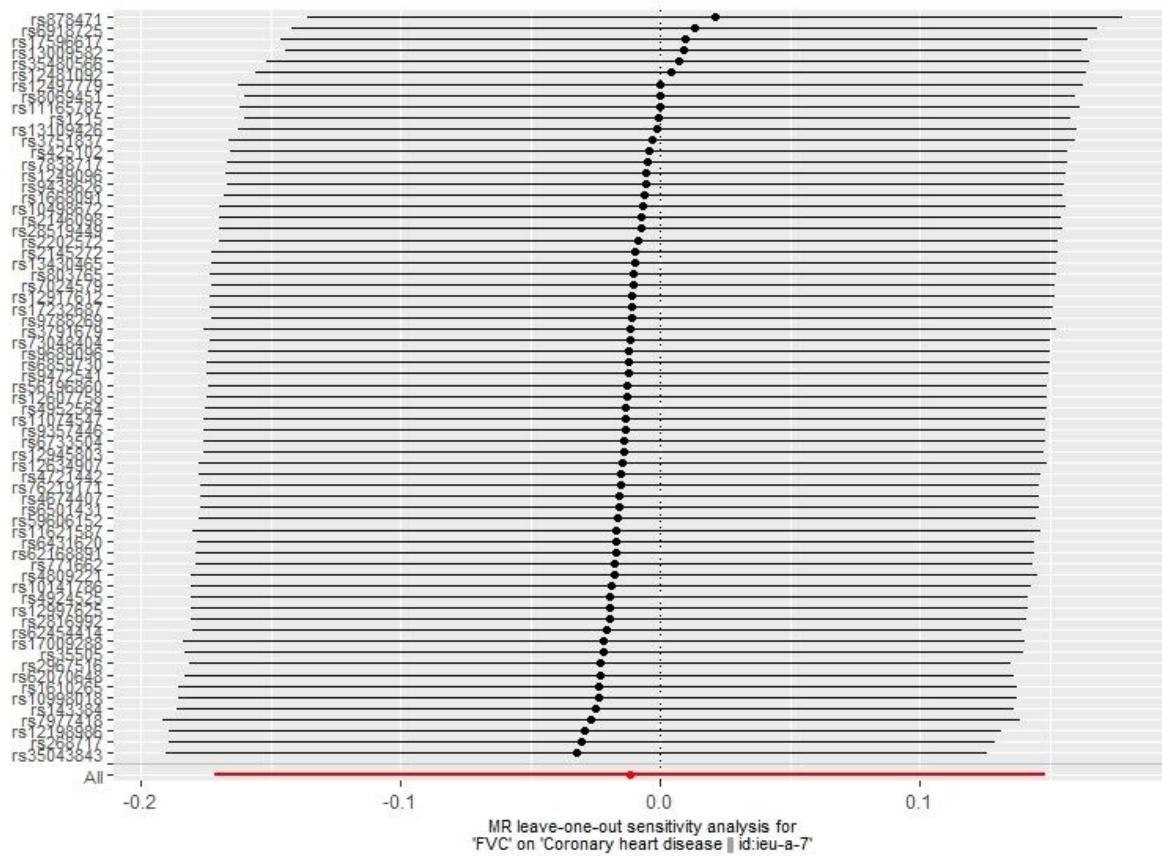
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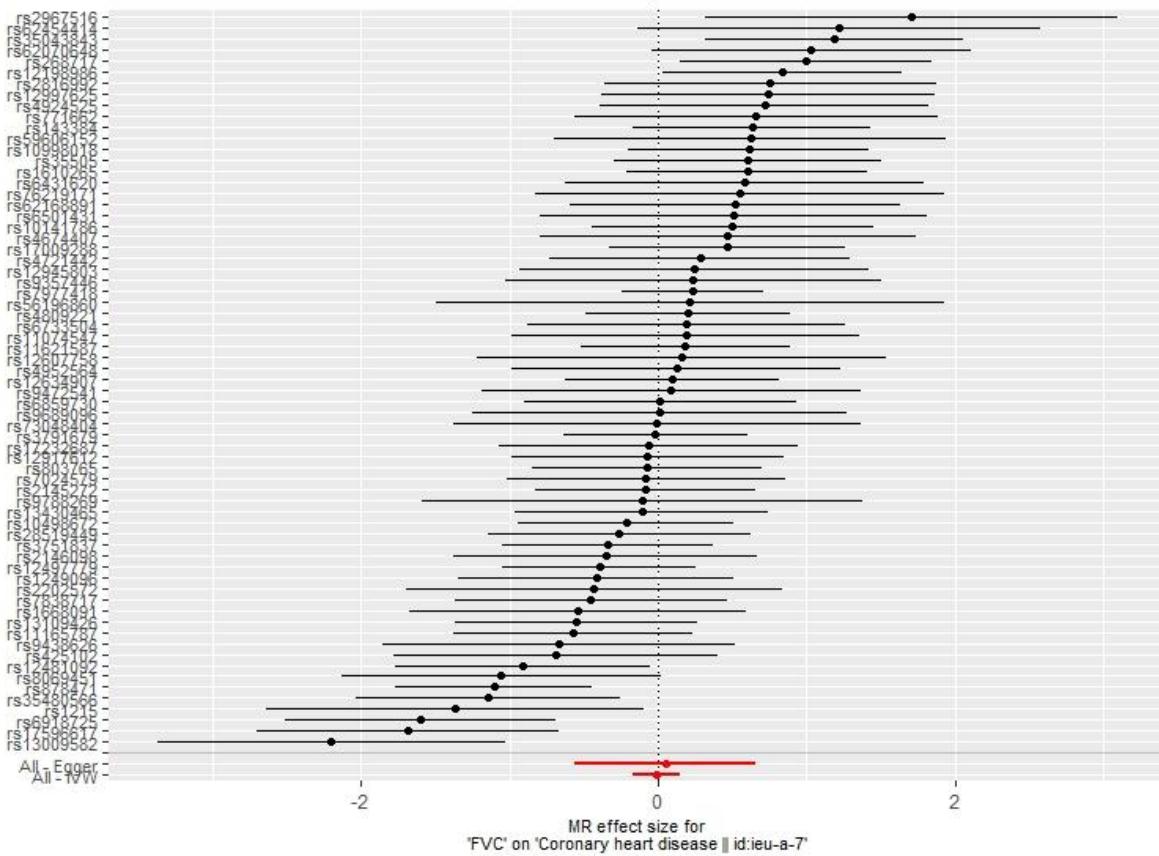
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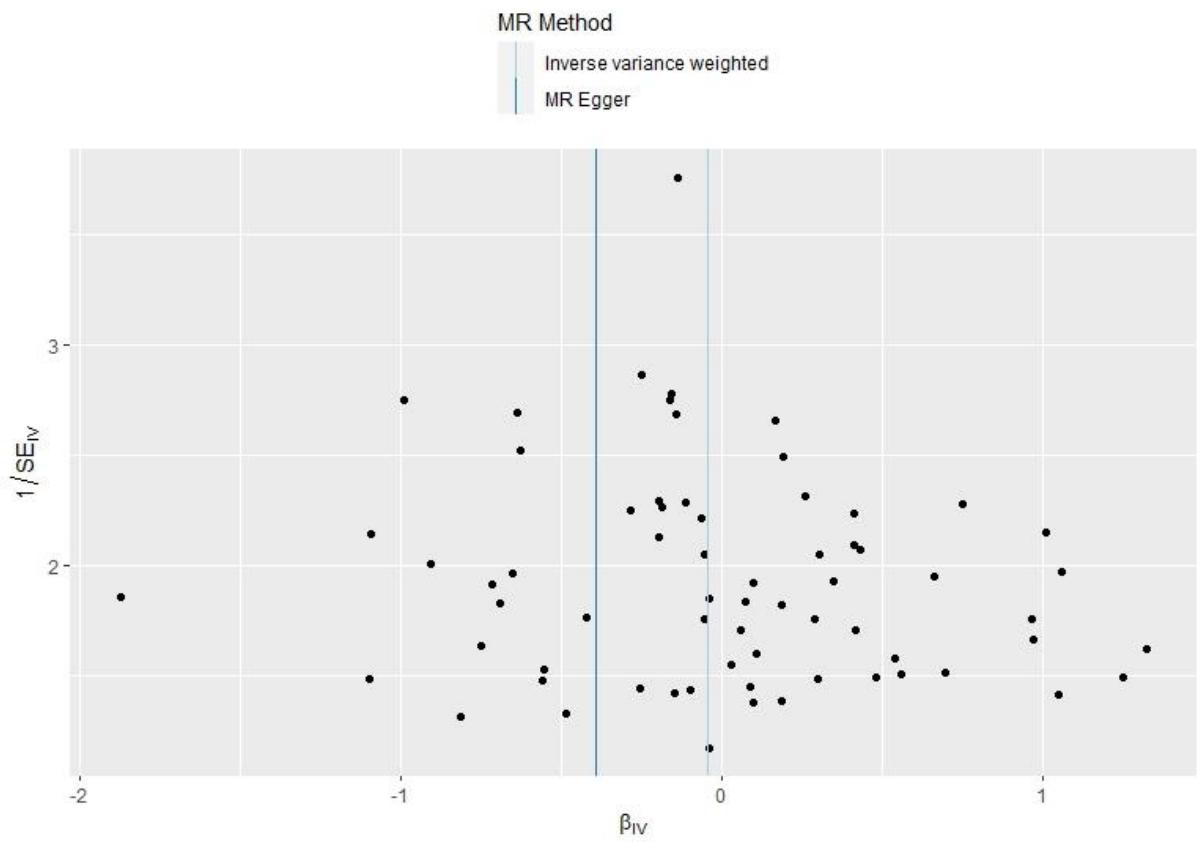
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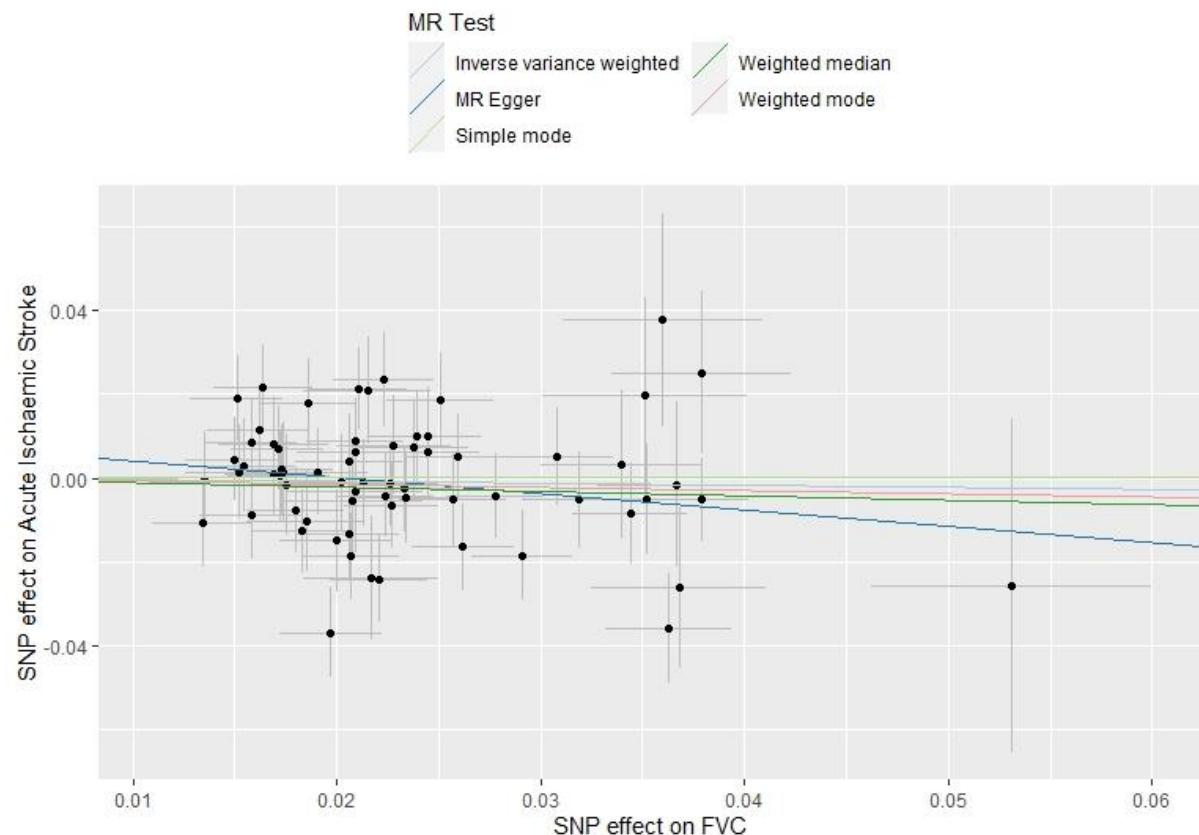


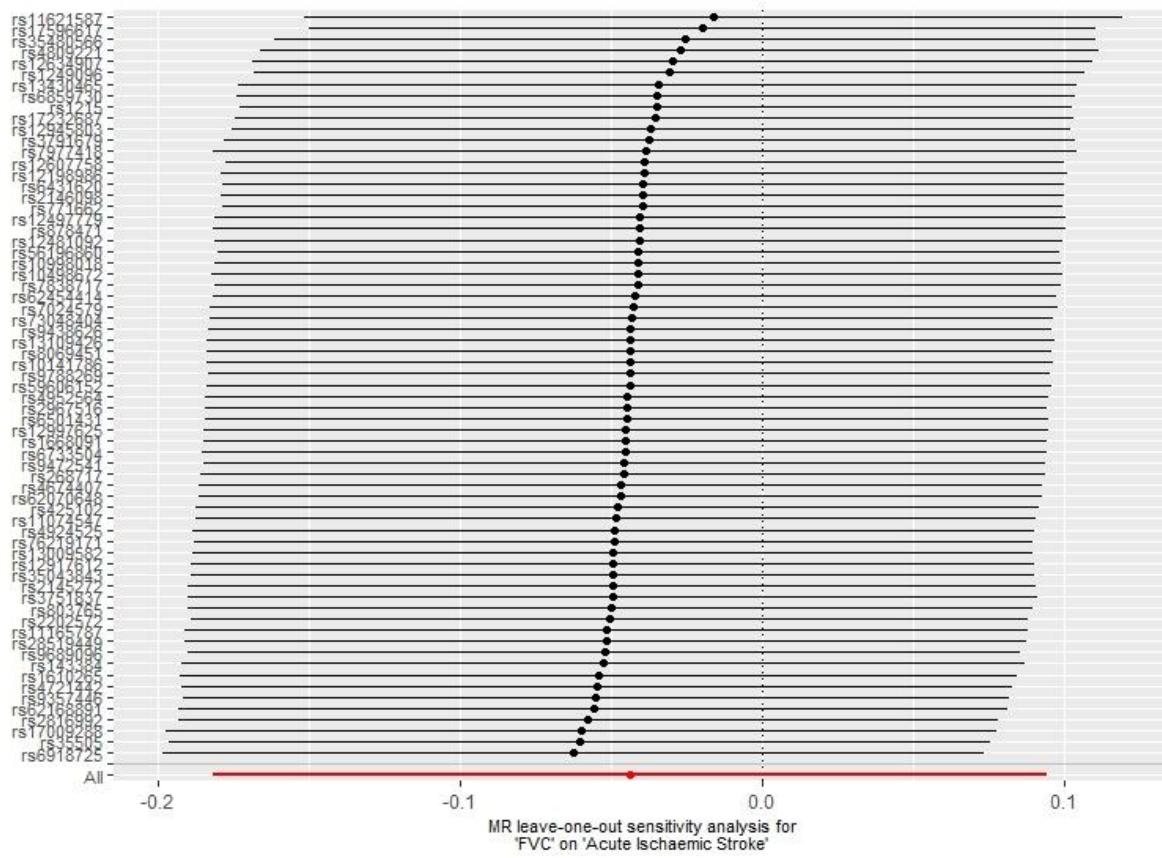


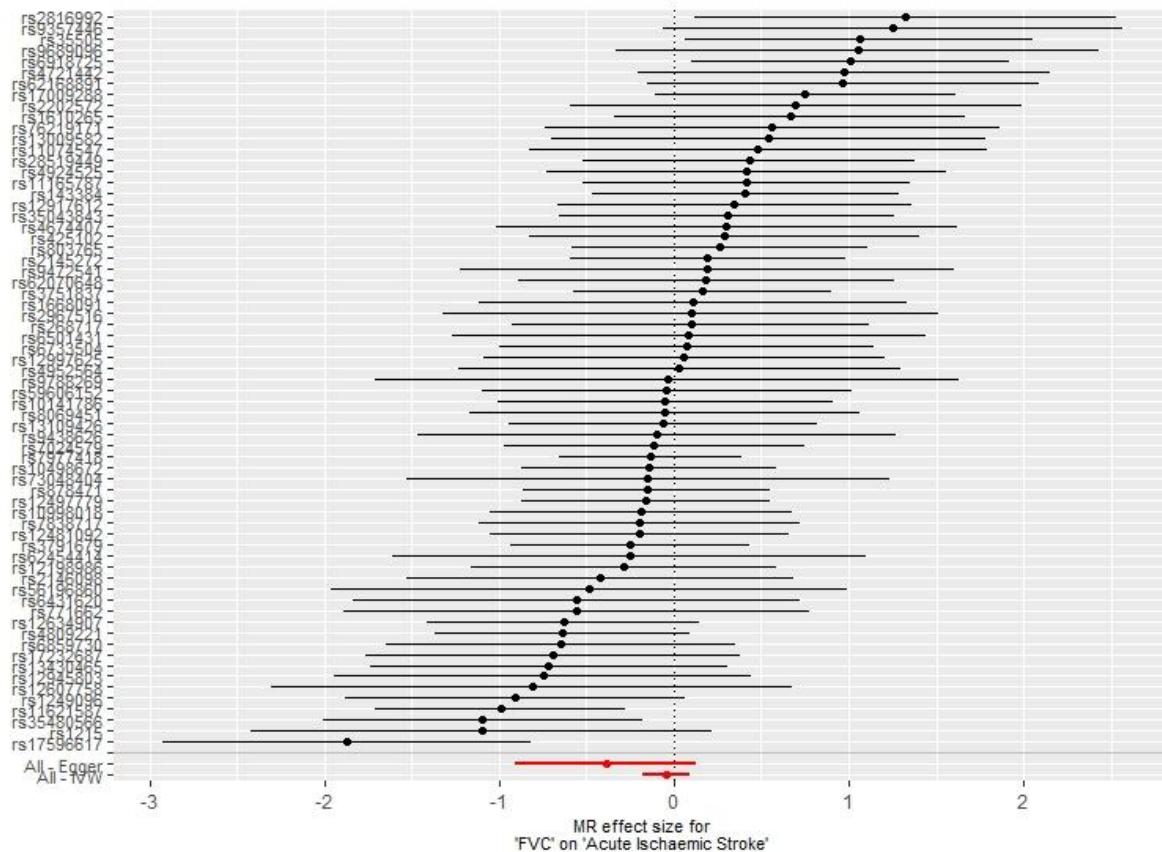


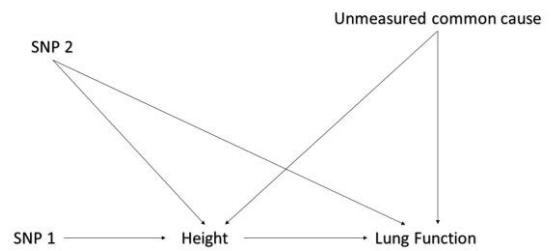












Lung Function SNPs

SNP	CHR	BP	effect_allele	other_allele	EAF	BETA	SE	P_VALUE	Trait
rs9661802	1	6678864	A	C	0.66	0.0247	0.0025	5.6E-23	FEV1/FVC
rs1273780!	1	22612690	A	G	0.78	0.0203	0.0028	6.6E-13	FEV1
rs9438626	1	26775367	C	G	0.21	0.0175	0.0028	8.1E-10	FVC
rs1209623:	1	26796922	C	G	0.25	-0.0187	0.0027	2.1E-12	FEV1
rs1416685	1	51243374	C	G	0.41	0.0202	0.0024	5.6E-17	FEV1/FVC
rs7267346:	1	60966772	T	G	0.95	0.0508	0.0055	3.1E-20	FEV1/FVC
rs9661687	1	78387270	T	C	0.86	-0.0271	0.0035	6.1E-15	FEV1/FVC
rs1087485:	1	92106637	A	C	0.48	-0.0139	0.0024	5.1E-09	FEV1/FVC
rs9970286	1	111737398	A	G	0.33	0.0236	0.0025	1.9E-20	FEV1/FVC
rs1120535:	1	150249101	A	C	0.44	0.017	0.0025	2.5E-11	PEF
rs1419429:	1	155137395	T	G	0.11	-0.0362	0.0039	9.6E-21	FEV1/FVC
rs4651005	1	178719306	T	C	0.32	0.0185	0.0025	1.4E-13	FEV1
rs2146098	1	186090370	A	G	0.65	-0.018	0.0024	2E-13	FVC
rs1753140:	1	186113852	C	G	0.18	0.028	0.0031	2.8E-19	FEV1/FVC
rs1091960:	1	198898157	A	G	0.60	0.0198	0.0024	4.5E-16	FEV1/FVC
rs4309038	1	201884647	C	G	0.43	0.0153	0.0024	2.1E-10	FEV1/FVC
rs2799098	1	218521609	A	G	0.82	-0.0285	0.0031	5E-20	FEV1/FVC
rs7512895:	1	219483218	A	G	0.08	-0.0445	0.0045	2.3E-23	FEV1/FVC
rs1700928:	1	221204299	A	C	0.71	-0.0251	0.0026	3.7E-22	FVC
rs2544536	2	15906854	T	C	0.49	-0.0239	0.0024	4.1E-24	FEV1/FVC
rs6751968	2	18570024	A	C	0.18	0.0252	0.003	1.3E-16	FVC
rs1343046:	2	18702313	T	C	0.08	0.0368	0.0043	1.9E-17	FVC
rs1300958:	2	24018480	A	G	0.45	0.0158	0.0023	1.5E-11	FVC
rs732990	2	26842146	C	G	0.44	-0.0155	0.0023	3.7E-11	FVC
rs4952564	2	42243850	A	G	0.68	-0.0172	0.0025	7E-12	FVC
rs1247086:	2	102926362	A	G	0.39	-0.0203	0.0024	1E-16	FEV1/FVC
rs1406225	2	145797829	T	G	0.28	-0.0197	0.0026	8.7E-14	FEV1/FVC
rs7424771	2	161276378	A	G	0.45	-0.0169	0.0024	6.6E-13	FEV1
rs2304340	2	179260382	A	G	0.41	-0.014	0.0024	3.7E-09	FEV1
rs2084448	2	187530520	T	C	0.71	0.0197	0.0026	4.6E-14	FEV1/FVC
rs1249096	2	199723365	A	G	0.56	0.0207	0.0024	3.9E-18	FVC
rs985256	2	201208692	A	C	0.22	0.0179	0.0029	5.9E-10	FEV1/FVC
rs1299762:	2	202970250	T	C	0.53	-0.0169	0.0024	8.9E-13	FVC
rs6435952	2	217614730	A	T	0.15	0.0258	0.0033	1.1E-14	FEV1/FVC
rs4294980	2	218604356	A	G	0.79	0.0179	0.0029	4E-10	FEV1
rs4674407	2	220382700	T	C	0.50	-0.015	0.0024	2.8E-10	FVC
rs6431620	2	239604970	T	G	0.79	0.0185	0.0029	1.4E-10	FVC
rs6437219	2	241844033	T	C	0.52	0.0185	0.0025	1.2E-13	FVC
rs6733504	2	242495953	A	G	0.55	0.0191	0.0024	7.4E-16	FVC
rs2974389	3	13787641	A	G	0.43	0.0165	0.0023	1.7E-12	FEV1
rs7304840:	3	25179533	T	G	0.85	0.0209	0.0033	2.1E-10	FVC
rs3548056:	3	71583177	A	G	0.56	-0.0221	0.0024	1.2E-20	FVC
rs586936	3	73862616	A	G	0.40	-0.018	0.0025	2.1E-13	FEV1/FVC
rs1610265	3	99420192	T	C	0.08	-0.0379	0.0044	8.8E-18	FVC
rs1799807	3	165548529	T	C	0.98	0.0598	0.0088	8.6E-12	FEV1/FVC
rs6780171	3	185503456	A	T	0.31	-0.0174	0.0025	6.2E-12	FEV1
rs1233186:	4	56012149	A	G	0.18	-0.0181	0.0031	3.2E-09	FEV1
rs6231631:	4	75676529	A	G	0.26	0.0272	0.0027	2.2E-23	FEV1/FVC
rs1109819:	4	79403952	T	G	0.51	-0.0196	0.0024	2.4E-16	FEV1/FVC

rs1310942	4	145330628	A	G	0.59	-0.0226	0.0024	4.2E-21	FVC
rs1311699	4	145442364	A	G	0.54	0.0665	0.0025	3E-153	PEF
rs1173984	5	609661	A	G	0.20	-0.021	0.0029	4.3E-13	FEV1
rs4866846	5	43976162	A	G	0.15	0.0277	0.0033	2.5E-17	FEV1
rs1005966	5	121410529	C	G	0.83	-0.0308	0.0032	1.8E-22	FEV1/FVC
rs1716339	5	128767384	A	G	0.88	-0.0307	0.0036	3.3E-17	FEV1/FVC
rs1800888	5	148206885	T	C	0.01	-0.0844	0.0098	6.4E-18	FEV1
rs1005990	5	170901463	T	G	0.35	-0.0352	0.0026	1.5E-42	FEV1/FVC
rs7989847	5	179598771	T	C	0.67	-0.0308	0.0026	2.3E-33	FEV1/FVC
rs1219898	6	7720059	A	G	0.48	-0.0227	0.0023	2.2E-22	FVC
rs9689096	6	34188892	A	C	0.94	-0.036	0.0049	2E-13	FVC
rs9357446	6	44447598	A	G	0.52	-0.0151	0.0023	1E-10	FVC
rs1220231	6	45530471	T	C	0.68	-0.0209	0.0025	2.2E-16	FEV1/FVC
rs9472541	6	45622748	A	T	0.29	-0.0154	0.0026	2.5E-09	FVC
rs2894837	6	56336406	A	G	0.64	0.0175	0.0024	9.2E-13	FEV1
rs2627237	6	134339265	A	G	0.59	0.0141	0.0024	3.5E-09	FEV1
rs1102077	6	140271357	A	C	0.76	0.0215	0.0027	4.2E-15	FEV1
rs9385988	6	142560957	A	G	0.72	-0.0279	0.0026	1.4E-26	FEV1
rs4721457	7	15872324	T	C	0.85	0.0244	0.0033	1.7E-13	FEV1/FVC
rs559233	7	26848830	T	C	0.49	0.0168	0.0023	7.8E-13	FEV1
rs6245441	7	27182329	T	G	0.87	0.0208	0.0034	1.3E-09	FVC
rs1513272	7	28200097	T	C	0.50	0.0198	0.0023	1.1E-17	FEV1
rs1723268	7	46448518	T	C	0.50	-0.0183	0.0024	6.8E-15	FVC
rs1270769	7	84569510	C	G	0.66	-0.0205	0.0025	1.7E-16	FEV1
rs193686	7	116431427	T	C	0.68	-0.0178	0.0026	4.1E-12	FEV1/FVC
rs330939	8	9018590	T	G	0.62	0.0232	0.0025	4.5E-21	FEV1/FVC
rs4128298	8	11823332	T	C	0.72	-0.0172	0.0026	3.5E-11	FEV1
rs7465401	8	70367248	T	C	0.73	-0.0211	0.0026	9.1E-16	FEV1
rs7838717	8	145504343	T	C	0.36	-0.0234	0.0025	6.5E-21	FVC
rs7041139	9	18013733	T	C	0.32	-0.0173	0.0025	3.1E-12	FEV1
rs7274397	9	98878881	A	G	0.83	-0.0232	0.0032	4E-13	FEV1/FVC
rs5764946	9	101632854	A	G	0.39	0.0178	0.0025	5.4E-13	FEV1/FVC
rs967497	9	131943843	A	G	0.31	0.015	0.0025	2.8E-09	FEV1
rs1274475	10	34480582	A	G	0.39	0.0168	0.0025	8.3E-12	FEV1/FVC
rs6082098	10	75639578	T	C	0.19	-0.0201	0.0032	6.4E-10	PEF
rs1119184	10	105639611	T	C	0.49	-0.0168	0.0023	6.2E-13	FEV1
rs1083636	11	35308988	T	C	0.75	0.0191	0.0027	2.3E-12	FEV1/FVC
rs5619686	12	2908330	A	C	0.03	-0.0531	0.0069	1.4E-14	FVC
rs1281181	12	4243749	T	C	0.46	0.0149	0.0024	2.6E-10	FEV1
rs1084130	12	19808912	C	G	0.55	0.0167	0.0024	2.3E-12	FEV1/FVC
rs1244869	12	65075332	T	G	0.63	0.0153	0.0025	6.2E-10	FEV1/FVC
rs1117600	12	66409367	A	C	0.13	-0.0291	0.0035	4.9E-17	FEV1
rs972936	12	102824921	T	C	0.26	0.0286	0.0029	1.8E-23	PEF
rs2701110	12	114669870	A	C	0.17	0.0259	0.0032	1.9E-16	FEV1
rs9533803	13	44820608	T	C	0.21	-0.0261	0.0029	2.9E-19	FEV1/FVC
rs2812208	13	50707087	C	G	0.02	0.0612	0.0081	4.9E-14	FEV1
rs803765	13	71647588	A	C	0.35	-0.0245	0.0025	1.7E-23	FVC
rs4885681	13	80467235	T	C	0.72	0.0186	0.0026	1.8E-12	FEV1
rs1162038	13	99665512	A	C	0.10	-0.027	0.0039	4.6E-12	FEV1/FVC
rs9634470	13	109918493	T	C	0.73	-0.0208	0.0027	2.7E-14	FEV1/FVC

rs1951121	14	23429729	T	G	0.60	0.0189	0.0024	7.5E-15	FEV1/FVC
rs7405312	14	54346010	A	G	0.10	0.0392	0.004	2.2E-22	FEV1/FVC
rs1014178	14	74817418	A	G	0.40	0.0213	0.0024	9.5E-19	FVC
rs3424550	15	40397191	C	G	0.81	0.0212	0.003	1.6E-12	FVC
rs2304645	15	40716253	C	G	0.52	-0.0154	0.0023	2.9E-11	FEV1
rs4924525	15	41255396	A	C	0.52	-0.0171	0.0023	3.4E-13	FVC
rs7923409	15	49409527	A	G	0.26	0.0268	0.0027	3.2E-23	FEV1/FVC
rs3525199	15	49706145	A	T	0.93	-0.0506	0.0047	2.8E-27	FEV1/FVC
rs6201277	15	63866877	T	C	0.82	-0.0288	0.0031	2.4E-20	FEV1/FVC
rs7176074	15	73833600	T	G	0.05	0.0339	0.0055	6.6E-10	FEV1/FVC
rs3751837	16	3583173	T	C	0.22	-0.0308	0.0028	9.1E-28	FVC
rs5610488	16	4361138	T	C	0.69	0.0205	0.0026	5.3E-15	FEV1/FVC
rs1107454	16	10136889	T	G	0.74	-0.0169	0.0027	2E-10	FVC
rs7621917	16	50188929	A	G	0.06	-0.0351	0.005	2.1E-12	FVC
rs3542003	16	53935407	T	C	0.95	-0.045	0.0053	3.1E-17	FEV1/FVC
rs1291814	16	86403821	C	G	0.11	-0.027	0.0038	6.7E-13	FEV1/FVC
rs6539952	16	86579223	A	C	0.26	-0.017	0.0027	3.5E-10	FEV1
rs8082036	17	3882613	C	G	0.51	0.0238	0.0024	7.3E-24	FEV1/FVC
rs4796334	17	6469793	A	G	0.50	-0.0135	0.0023	7.4E-09	FEV1
rs1215	17	7163350	A	G	0.86	0.0217	0.0033	9.6E-11	FVC
rs4968200	17	7448457	C	G	0.14	-0.0219	0.0033	4.5E-11	FEV1
rs3435163	17	16030520	T	C	0.47	0.0147	0.0023	3.4E-10	FVC
rs1294580	17	46552229	T	C	0.78	0.02	0.0028	1.9E-12	FVC
rs2851944	17	54195453	T	C	0.40	0.0209	0.0024	1.3E-18	FVC
rs8068952	17	59286644	C	G	0.78	-0.0285	0.0029	1.2E-22	FEV1/FVC
rs7767232	17	62497964	T	C	0.03	-0.0451	0.0076	3E-09	FVC
rs1165395	17	62686730	A	G	0.74	0.0197	0.0028	9.2E-13	FEV1/FVC
rs996865	17	69371318	T	C	0.08	-0.0475	0.0046	1.8E-25	FEV1/FVC
rs5960615	17	79952944	T	C	0.11	0.0367	0.0039	9.2E-21	FVC
rs8089099	18	10078071	A	G	0.27	0.0235	0.0027	1.5E-18	FEV1/FVC
rs1985511	18	19816712	A	T	0.45	0.0165	0.0024	5.6E-12	FEV1/FVC
rs303752	18	21074255	A	G	0.41	-0.0165	0.0024	7E-12	FVC
rs1668091	18	22290711	T	C	0.68	-0.0173	0.0025	5.2E-12	FVC
rs9807668	18	42827898	T	C	0.09	0.0294	0.004	1.4E-13	FEV1
rs2202572	18	53566471	A	C	0.33	0.0162	0.0025	7E-11	FVC
rs1108574	19	10819967	T	C	0.56	-0.0153	0.0024	7.8E-11	FEV1
rs2967516	19	36881643	A	G	0.71	-0.0152	0.0026	3.7E-09	FVC
rs6032942	20	10745545	C	G	0.23	0.0173	0.0027	3.5E-10	FEV1
rs1262725	21	35368402	T	G	0.13	0.0357	0.0035	6.8E-24	FEV1/FVC
rs1131111	22	50867711	T	C	0.12	0.022	0.0036	1.1E-09	FEV1
rs9435733	1	17308254	T	C	0.48	0.0389	0.0024	5.9E-61	FEV1/FVC
rs755249	1	39995074	T	C	0.23	-0.0239	0.0028	9.8E-18	FEV1/FVC
rs1192415	1	92077097	A	G	0.81	0.044	0.003	2.3E-47	FEV1/FVC
rs1116578	1	92381483	A	G	0.69	0.0245	0.0026	1.6E-21	FEV1/FVC
rs3504384	1	118911295	T	G	0.76	-0.0238	0.0027	4.1E-18	FVC
rs878471	1	150547747	A	G	0.58	-0.0278	0.0024	1.5E-31	FVC
rs2816992	1	200069216	A	G	0.59	-0.0164	0.0024	7.3E-12	FVC
rs1008833	1	204426295	A	G	0.85	-0.0324	0.0036	1.5E-19	PEF
rs556648	1	215120596	A	G	0.22	0.0147	0.0029	3.1E-07	FVC
rs6604614	1	218631452	C	G	0.72	-0.0156	0.0028	2.1E-08	PEF

rs2861326	1	218855029	C	G	0.51	0.0168	0.0023	9.2E-13	FEV1
rs1338227	1	219853742	T	G	0.58	0.0245	0.0024	3.9E-24	FEV1/FVC
rs1275743	1	221631938	A	G	0.33	0.0159	0.0025	1.8E-10	FVC
rs2355237	1	239857524	A	G	0.51	0.029	0.0025	9.4E-31	PEF
rs5588479	2	18287623	T	C	0.83	-0.0415	0.0031	4E-40	FEV1/FVC
rs3791679	2	56096892	A	G	0.77	0.0344	0.0028	7.2E-35	FVC
rs6216889	2	135672187	T	C	0.40	0.0186	0.0024	1.1E-14	FVC
rs7290217	2	157016257	T	C	0.13	-0.0335	0.0034	1.8E-22	FEV1
rs2571445	2	218683154	A	G	0.40	-0.0285	0.0024	7.2E-33	FEV1
rs6220173	2	229502197	A	C	0.92	-0.0743	0.0044	9.4E-63	FEV1/FVC
rs6710301	2	239441308	A	C	0.15	0.0235	0.0033	8.5E-13	FEV1
rs4308141	2	239881309	C	G	0.80	-0.0484	0.003	3.6E-59	FEV1/FVC
rs1529672	3	25520582	A	C	0.17	0.0423	0.0031	1.7E-41	FEV1/FVC
rs1766633	3	29469675	T	G	0.72	0.0267	0.0027	9.2E-24	FEV1/FVC
rs1271547	3	55152319	A	G	0.59	0.025	0.0024	1.3E-24	FEV1/FVC
rs6445932	3	57879611	T	G	0.75	-0.0287	0.0027	3.8E-26	FEV1
rs4132748	3	67455803	T	C	0.31	-0.0205	0.0026	1.2E-15	FEV1
rs1249777	3	98822050	T	G	0.23	-0.0319	0.0028	1.8E-30	FVC
rs2999090	3	127931340	A	G	0.88	-0.0433	0.0037	6.8E-32	FEV1/FVC
rs1263490	3	158226886	A	G	0.66	0.0262	0.0025	2.8E-26	FVC
rs879394	3	168709843	T	G	0.23	-0.0289	0.0028	1.4E-25	FEV1
rs7810172	3	169295436	A	G	0.85	0.0334	0.0032	7.7E-25	FEV1
rs6228934	4	7879027	T	C	0.44	0.0167	0.0024	2.4E-12	FEV1/FVC
rs2609279	4	89855495	T	C	0.21	0.0537	0.0029	2.1E-76	FEV1/FVC
rs2869966	4	89869078	T	C	0.41	-0.0415	0.0024	5.8E-66	FEV1/FVC
rs6533183	4	106133184	T	C	0.65	-0.0297	0.0025	2.6E-32	FEV1/FVC
rs1172222	4	106766430	T	C	0.93	-0.0729	0.0047	2.4E-54	FEV1
rs3471297	4	106819053	A	G	0.26	-0.0682	0.0028	4E-134	FEV1/FVC
rs1314164	4	145506456	T	C	0.60	-0.0704	0.0024	4E-184	FEV1/FVC
rs2353940	4	145740898	T	C	0.75	0.0384	0.0029	5.1E-40	PEF
rs268717	5	33352738	T	C	0.91	-0.034	0.004	3.2E-17	FVC
rs6859730	5	44367221	A	T	0.33	0.0206	0.0025	8.8E-17	FVC
rs1252211	5	52187038	A	C	0.27	-0.0367	0.0027	1.5E-41	FEV1/FVC
rs2441026	5	53444498	T	C	0.46	0.0177	0.0024	7.8E-14	FVC
rs425102	5	77396400	T	G	0.76	0.0209	0.0028	2.8E-14	FVC
rs987068	5	95025146	C	G	0.69	-0.0296	0.0026	1.5E-30	FEV1/FVC
rs3843503	5	131466629	A	T	0.45	-0.0187	0.0024	7E-15	FVC
rs7733410	5	147856522	A	G	0.44	0.0505	0.0024	1.6E-96	FEV1/FVC
rs1195267	5	148652302	T	G	0.40	-0.0186	0.0024	1.4E-14	FEV1
rs1113476	5	156908317	T	C	0.06	-0.0628	0.0049	8E-38	FEV1/FVC
rs1113478	5	156944199	A	C	0.34	-0.0408	0.0025	3.1E-59	FEV1/FVC
rs1294417	6	6741932	T	C	0.46	-0.0311	0.0024	3.9E-39	FEV1/FVC
rs2076295	6	7563232	T	G	0.55	-0.0234	0.0024	7E-23	FEV1/FVC
rs1049867	6	7797840	C	G	0.82	0.0352	0.003	7.5E-31	FVC
rs1319808	6	22017543	C	G	0.35	0.0297	0.0025	3.1E-33	FEV1/FVC
rs7752448	6	28301099	A	G	0.87	0.0553	0.0038	1.2E-48	PEF
rs2070600	6	32151443	T	C	0.06	0.1452	0.0049	3E-189	FEV1/FVC
rs9274247	6	32631295	A	G	0.32	-0.0469	0.003	9.8E-57	FEV1/FVC
rs1320640	6	73663814	A	C	0.20	0.0344	0.003	4.7E-31	FEV1/FVC
rs2798641	6	109268050	T	C	0.18	-0.045	0.0031	3.9E-48	FEV1/FVC

rs6918725	6	126990392	T	G	0.48	-0.0211	0.0024	4.7E-19	FVC
rs1728029:	6	142688969	A	G	0.97	-0.1803	0.0074	2E-131	FEV1/FVC
rs7753012	6	142745883	T	G	0.69	-0.0712	0.0026	5E-165	FEV1/FVC
rs4318980	7	7256490	A	G	0.41	-0.0172	0.0024	9.1E-13	FEV1/FVC
rs4721442	7	15506007	T	G	0.83	0.0215	0.0031	7.2E-12	FVC
rs2261360	7	99692993	T	G	0.23	0.0219	0.0028	8.7E-15	FEV1/FVC
rs1269840:	7	156127246	A	G	0.44	-0.0274	0.0024	6.4E-31	FEV1
rs771662	9	1568941	T	C	0.35	-0.0158	0.0025	1.1E-10	FVC
rs1570203	9	4120648	A	G	0.53	0.0246	0.0024	5.8E-25	FEV1/FVC
rs1107677	9	23587027	T	C	0.48	0.0219	0.0024	3.9E-20	FEV1/FVC
rs2844632:	9	98266855	A	T	0.09	-0.0523	0.0042	4.7E-36	FEV1/FVC
rs1491106	9	109483517	T	G	0.38	0.0245	0.0025	2.8E-23	FEV1/FVC
rs1098318:	9	119234058	T	C	0.64	0.0273	0.0025	9E-28	FEV1/FVC
rs7024579	9	139100413	T	C	0.32	-0.0233	0.0025	4.5E-20	FVC
rs4073153	9	139259349	A	G	0.56	0.0138	0.0024	8.6E-09	FVC
rs7090277	10	12278021	A	T	0.52	0.0409	0.0024	4E-67	FEV1/FVC
rs7914842	10	30268770	A	G	0.58	0.0165	0.0026	1E-10	PEF
rs7082066	10	64998971	A	G	0.18	0.0221	0.003	2.2E-13	FEV1
rs1099801:	10	69962954	A	G	0.50	-0.0224	0.0024	2.4E-21	FVC
rs7098573	10	75580014	A	G	0.72	-0.0246	0.0026	2.8E-21	FEV1
rs1259605	10	77119039	T	C	0.75	-0.0119	0.0027	1.2E-05	FVC
rs2637254	10	78312002	A	G	0.51	-0.0285	0.0023	3.9E-34	FEV1
rs721917	10	81706324	A	G	0.58	0.0193	0.0024	1.6E-15	FEV1/FVC
rs4279944	10	124297637	T	C	0.15	0.0218	0.0034	2.2E-10	FEV1/FVC
rs1759661:	11	43690717	T	C	0.32	-0.0197	0.0025	3.6E-15	FVC
rs1083843:	11	45244903	C	G	0.14	0.0211	0.0033	1.5E-10	FEV1
rs7149039:	11	62370155	A	G	0.37	0.0264	0.0024	1.7E-27	FEV1
rs2027761	11	73036179	T	C	0.11	0.0369	0.0038	1.3E-22	FEV1/FVC
rs1123476:	11	86448839	T	C	0.85	0.0303	0.0033	5.1E-20	FEV1/FVC
rs541601	11	126009500	T	C	0.18	-0.0241	0.0031	5.3E-15	FEV1/FVC
rs7977418	12	28588242	T	C	0.54	0.0379	0.0023	9.6E-59	FVC
rs1689510	12	56396768	C	G	0.34	-0.0153	0.0025	5.6E-10	FEV1
rs1117211:	12	57527283	T	C	0.59	-0.0227	0.0024	7E-21	FEV1/FVC
rs1282574:	12	65793153	C	G	0.31	0.0198	0.0025	6.3E-15	FEV1
rs5639048:	12	85719906	A	G	0.29	0.0196	0.0028	1.7E-12	PEF
rs9788269	12	94194890	A	G	0.73	-0.0135	0.0027	4E-07	FVC
rs1137456:	12	95554771	T	C	0.22	-0.0275	0.0029	2.4E-21	FEV1/FVC
rs7970544	12	96242109	T	G	0.19	0.0439	0.0031	1.4E-46	FEV1/FVC
rs1085037:	12	115201436	A	G	0.34	0.0195	0.0025	4E-15	FEV1
rs35505	12	115501127	A	G	0.69	0.0223	0.0025	1.9E-18	FVC
rs3510713:	14	54419106	A	C	0.60	0.0315	0.0025	3.4E-36	FEV1/FVC
rs1756281	14	84338431	A	G	0.70	0.0237	0.0026	1.4E-19	FEV1/FVC
rs1116003:	14	92512143	A	G	0.62	-0.0175	0.0024	4.7E-13	FEV1
rs1162158:	14	93098339	C	G	0.18	0.0363	0.0031	1.4E-32	FVC
rs2012453	15	41840238	A	G	0.41	0.0239	0.0024	4.3E-23	FEV1/FVC
rs5638398:	15	41953211	T	C	0.05	-0.0364	0.0053	7.1E-12	FEV1/FVC
rs1291761:	15	67491274	A	C	0.23	-0.0228	0.0028	2E-16	FVC
rs1441358	15	71612514	T	G	0.66	0.0642	0.0025	4E-145	FEV1/FVC
rs6201588:	15	71803450	T	C	0.18	-0.0206	0.003	1.2E-11	FEV1
rs1896797	15	84274591	A	G	0.49	0.0292	0.0024	2.5E-34	FEV1/FVC

rs7844281:	16	10740982	C	G	0.20	-0.0355	0.0031	2.2E-31	FEV1/FVC
rs1244658:	16	28870962	A	G	0.40	-0.0131	0.0024	2.8E-08	FEV1
rs1164850:	16	58063513	T	G	0.68	0.0332	0.0026	9.9E-39	FEV1/FVC
rs8047194	16	69891510	T	G	0.50	-0.0208	0.0023	6.7E-19	FEV1
rs1185899:	16	75411445	A	C	0.40	0.038	0.0024	4.8E-55	FEV1/FVC
rs2345443	16	78225633	A	G	0.31	0.0221	0.0025	3E-18	FEV1
rs2244592	17	28072327	A	G	0.45	-0.0323	0.0024	4.6E-42	FEV1/FVC
rs6207064:	17	29210595	A	G	0.27	0.0206	0.0026	5.3E-15	FVC
rs3524683:	17	36915540	T	C	0.87	0.0386	0.0036	1.4E-27	FEV1/FVC
rs8069451	17	37504933	T	C	0.75	0.0202	0.0027	7.3E-14	FVC
rs7941243:	17	43940021	A	G	0.22	-0.0426	0.0029	3.1E-49	FEV1
rs6501431	17	68976415	T	C	0.78	0.0174	0.0029	1.1E-09	FVC
rs6501455	17	69201811	A	G	0.50	0.0296	0.0023	1.3E-36	FEV1
rs9892893	17	73525670	T	G	0.26	0.0198	0.0027	2.1E-13	FEV1
rs513953	18	8801351	A	G	0.25	-0.0273	0.0027	1.2E-24	FEV1
rs1108205:	18	20234336	A	G	0.53	0.0128	0.0023	3.7E-08	FEV1
rs9947743	18	20708321	A	G	0.79	-0.0202	0.0028	1.2E-12	FEV1
rs1260775:	18	51022606	T	C	0.59	0.0134	0.0024	1.8E-08	FVC
rs9636166	19	31829613	A	C	0.87	0.0355	0.0036	3.7E-23	FEV1/FVC
rs3409391:	19	41117300	A	G	0.01	0.1535	0.0106	1.7E-47	FEV1/FVC
rs2145272	20	6626218	A	G	0.64	0.0259	0.0024	1.4E-26	FVC
rs2236180	20	25282608	T	C	0.82	0.0213	0.003	1E-12	FEV1
rs4413223	20	30858967	A	G	0.17	-0.0232	0.0031	1.3E-13	FEV1/FVC
rs143384	20	34025756	A	G	0.60	0.0239	0.0024	1E-23	FVC
rs1248109:	20	45486817	T	C	0.27	0.0257	0.0026	1.6E-22	FVC
rs4809221	20	62372706	A	G	0.68	-0.0291	0.0025	5.8E-31	FVC
rs6221373:	21	35675966	T	C	0.63	0.0246	0.0025	9.3E-24	FEV1/FVC
rs1978968	22	18448113	T	C	0.24	0.0293	0.0027	9.1E-27	FEV1
rs9610955	22	20790723	C	G	0.20	-0.0192	0.0029	6.9E-11	FEV1
rs2283847	22	28181399	T	C	0.56	-0.0219	0.0024	3.6E-19	FEV1/FVC

FEV1 SNPs in MVMR (after clumping)

SNP	CHR	BP	effect_allele	other_allele	EAF	BETA	SE	P_VALUE
rs262695	1	2144788	A	G	0.68	0.009665	0.001624	2.60E-09
rs658997	1	9343621	C	T	0.862	-0.01206	0.002176	3.00E-08
rs7517838	1	17276627	C	T	0.568	-0.00883	0.001526	7.10E-09
rs2473303	1	22353491	C	T	0.466	0.010975	0.0015	2.50E-13
rs10917335	1	23294136	A	G	0.67	0.009157	0.001595	9.30E-09
rs9438876	1	25241116	A	G	0.485	0.009029	0.001521	2.90E-09
rs61775365	1	26341297	C	G	0.788	-0.01137	0.001822	4.30E-10
rs12729961	1	26762049	C	T	0.789	0.013205	0.001828	5.00E-13
rs114745536	1	37958339	T	C	0.915	0.016489	0.002688	8.60E-10
rs11209237	1	41421720	C	T	0.696	-0.00916	0.001631	2.00E-08
rs114767964	1	50844197	G	T	0.96	-0.02106	0.00382	3.50E-08
rs72641150	1	68262843	A	G	0.754	0.009857	0.001736	1.40E-08
rs6692536	1	77734562	A	G	0.665	0.008618	0.001576	4.50E-08
rs2209457	1	111732711	G	A	0.669	-0.00867	0.001589	4.90E-08
rs6687454	1	149999764	T	A	0.832	0.011628	0.001999	6.00E-09
rs12402939	1	150615094	A	C	0.608	-0.00835	0.001528	4.60E-08
rs733190	1	172095226	T	C	0.525	-0.00939	0.001493	3.20E-10
rs2773080	1	178696750	T	C	0.419	0.008382	0.001509	2.80E-08
rs12144934	1	180901122	C	T	0.539	0.008481	0.001495	1.40E-08
rs944190	1	183314293	G	T	0.411	0.00833	0.001514	3.70E-08
rs74767794	1	184006128	A	G	0.684	-0.00921	0.001611	1.10E-08
rs2271424	1	204403311	T	C	0.85	-0.01194	0.002088	1.10E-08
rs113711540	1	218519928	A	AAAAC	0.731	-0.00959	0.001689	1.40E-08
rs11466399	1	218591623	G	A	0.713	-0.0161	0.001649	1.70E-22
rs138973302	1	221175417	T	TTCTA	0.706	-0.00951	0.001657	9.40E-09
rs61833064	1	227564847	G	A	0.83	0.011416	0.001986	9.10E-09
rs7546526	1	239781818	T	A	0.32	-0.00905	0.001614	2.10E-08
rs3885668	2	10178479	C	T	0.437	0.008672	0.001504	8.10E-09
rs4668972	2	15894443	A	G	0.498	-0.00906	0.00151	2.00E-09
rs55884799	2	18287623	T	C	0.825	-0.01551	0.001965	3.00E-15
rs9306877	2	18718414	C	T	0.358	0.009448	0.001558	1.30E-09
rs3795936	2	23879268	A	C	0.789	0.010486	0.001836	1.10E-08
rs2176263	2	24092773	G	C	0.399	-0.00881	0.00152	6.80E-09
rs13019149	2	25093151	C	T	0.569	0.008261	0.001504	3.90E-08
rs10184223	2	36735024	G	T	0.654	-0.00887	0.001578	1.90E-08
rs12469662	2	42240228	C	T	0.68	-0.0088	0.001597	3.60E-08
rs13412252	2	42373747	C	T	0.45	0.0094	0.0015	3.60E-10
rs56042410	2	46914082	A	T	0.739	-0.00956	0.001707	2.20E-08
rs1986260	2	55937866	A	G	0.944	-0.01954	0.003286	2.80E-09
rs11694967	2	55992140	G	C	0.874	-0.01329	0.002261	4.20E-09
rs72894568	2	65557049	A	G	0.975	-0.02614	0.004772	4.30E-08
rs71427097	2	97526963	C	T	0.971	0.024533	0.004486	4.50E-08
rs7573669	2	100548327	T	C	0.861	0.01294	0.002152	1.80E-09
rs10171677	2	135446390	A	G	0.463	0.008158	0.001493	4.60E-08
rs71348714	2	136455600	G	A	0.198	0.010618	0.001848	9.20E-09
rs76117428	2	156967584	A	G	0.89	0.01479	0.002392	6.30E-10

rs141595198	2	157107460	T	C	0.963	0.022105	0.004009	3.50E-08
rs7424771	2	161276378	G	A	0.557	0.008498	0.001499	1.40E-08
rs4667583	2	169466556	C	T	0.759	-0.01037	0.001742	2.70E-09
rs2444563	2	178162586	C	T	0.208	-0.01013	0.001834	3.30E-08
rs13408846	2	199684488	T	C	0.539	0.011611	0.001567	1.30E-13
rs10202052	2	203136519	G	T	0.757	0.009501	0.001734	4.30E-08
rs4674186	2	218396460	A	G	0.703	0.009434	0.001637	8.30E-09
rs1991161	2	218676890	C	T	0.434	-0.01004	0.001506	2.60E-11
rs140902759	2	226693125	T	C	0.99	0.043087	0.007886	4.70E-08
rs16828538	2	232812717	G	A	0.834	0.010975	0.002009	4.60E-08
rs10177049	2	239422169	G	T	0.852	-0.01155	0.002102	4.00E-08
rs59244464	2	241765757	A	C	0.317	0.008944	0.001631	4.10E-08
rs4675801	2	242493511	C	T	0.545	0.01344	0.001499	3.10E-19
rs7651349	3	11662320	G	A	0.458	-0.00829	0.001509	4.00E-08
rs2974386	3	13695304	C	T	0.491	0.008364	0.001495	2.20E-08
rs17666332	3	29469675	T	G	0.72	0.009251	0.00167	3.00E-08
rs146074128	3	32923640	C	CA	0.701	0.010481	0.001648	2.00E-10
rs57072412	3	33216357	G	A	0.617	-0.00873	0.001534	1.30E-08
rs7630377	3	41230654	T	C	0.513	0.009124	0.001491	9.40E-10
rs62261465	3	48551897	G	A	0.941	0.018849	0.003245	6.30E-09
rs7633271	3	49555963	T	C	0.695	-0.01002	0.001617	5.70E-10
rs358493	3	55072187	C	T	0.672	-0.00875	0.00159	3.70E-08
rs4681954	3	57159264	G	A	0.864	-0.0131	0.002174	1.70E-09
rs139681534	3	71462266	A	AAC	0.462	-0.00856	0.001508	1.40E-08
rs9821691	3	72396902	G	T	0.571	0.009474	0.001518	4.40E-10
rs12496694	3	98436880	G	A	0.747	0.009572	0.001724	2.80E-08
rs67639354	3	98947547	G	T	0.736	0.012527	0.001831	7.90E-12
rs6438515	3	118996122	C	T	0.919	0.014961	0.002735	4.50E-08
rs34642857	3	123051019	T	C	0.749	0.009819	0.001729	1.30E-08
rs7428883	3	128983853	A	G	0.219	-0.01358	0.001819	8.00E-14
rs9871963	3	141033481	A	G	0.632	-0.00973	0.001563	4.90E-10
rs62275574	3	156338528	C	A	0.96	0.025942	0.003873	2.10E-11
rs9759167	3	157603008	C	G	0.852	-0.0126	0.002108	2.20E-09
rs13321786	3	168641505	C	A	0.707	0.009157	0.00164	2.30E-08
rs1685642	3	168935870	C	T	0.416	-0.00956	0.00151	2.50E-10
rs585026	3	172121904	T	C	0.685	-0.0092	0.001622	1.40E-08
rs147676117	3	185259829	G	A	0.893	-0.01534	0.002464	4.90E-10
rs12631126	3	196788438	G	A	0.723	-0.00993	0.001668	2.60E-09
rs115152027	4	1217078	C	G	0.953	0.019412	0.003516	3.40E-08
rs2032463	4	2941988	T	C	0.586	-0.00936	0.001517	7.00E-10
rs9330348	4	7883887	C	G	0.403	-0.00931	0.001521	9.30E-10
rs6448973	4	13179078	A	G	0.695	-0.0098	0.001619	1.40E-09
rs112992178	4	17622910	C	T	0.944	0.02024	0.003332	1.20E-09
rs112374782	4	17783592	G	A	0.985	0.034319	0.006237	3.70E-08
rs74537632	4	18020156	G	A	0.968	-0.02387	0.00427	2.30E-08
rs56203712	4	25342606	A	G	0.765	-0.01048	0.001798	5.60E-09
rs78058368	4	57719766	A	C	0.501	0.009007	0.001499	1.90E-09

rs764274	4	106016437	T	G	0.226	-0.00989	0.001788	3.20E-08
rs1603705	4	106219139	A	G	0.662	-0.00865	0.00158	4.30E-08
rs17036102	4	106603098	T	C	0.849	-0.01197	0.002079	8.60E-09
rs114723682	4	107232695	T	C	0.942	0.026012	0.003239	9.60E-16
rs7682624	4	124633397	C	T	0.13	-0.01355	0.00224	1.40E-09
rs112763023	4	139961332	G	A	0.782	-0.01006	0.001813	2.80E-08
rs769657	4	140877659	A	G	0.669	-0.00889	0.00159	2.30E-08
rs28925904	4	144359490	C	T	0.975	0.028164	0.004776	3.70E-09
rs6841006	4	145228728	G	A	0.266	-0.01552	0.001699	6.50E-20
rs72733520	4	145547185	A	G	0.686	-0.01208	0.001616	7.80E-14
rs28503877	4	166319470	C	G	0.728	-0.00918	0.00168	4.60E-08
rs10475282	5	523995	G	A	0.733	0.010185	0.001701	2.10E-09
rs779862	5	43420747	C	A	0.298	-0.00911	0.001646	3.10E-08
rs6892212	5	44382842	C	A	0.223	0.010296	0.001791	9.00E-09
rs10513004	5	52235225	A	G	0.791	-0.01183	0.001848	1.50E-10
rs2441026	5	53444498	C	T	0.538	-0.00828	0.001498	3.20E-08
rs72767016	5	61410493	T	A	0.618	-0.00908	0.001539	3.70E-09
rs65407	5	64375128	C	T	0.328	-0.00928	0.001587	4.90E-09
rs166163	5	77370947	G	C	0.744	0.009898	0.001706	6.60E-09
rs33986149	5	88270485	C	CA	0.612	0.00856	0.001533	2.30E-08
rs7701266	5	108041917	C	G	0.877	-0.01352	0.0023	4.10E-09
rs75264134	5	122016065	C	G	0.898	0.014629	0.002505	5.20E-09
rs1978439	5	127645329	T	G	0.882	0.012839	0.002311	2.80E-08
rs2530251	5	129420295	A	T	0.662	0.008941	0.001613	3.00E-08
rs273909	5	131667353	A	G	0.884	0.013003	0.002321	2.10E-08
rs254577	5	134422204	T	C	0.627	0.008932	0.00157	1.30E-08
rs2531360	5	140116664	G	A	0.549	0.008216	0.0015	4.30E-08
rs2014738	5	140158240	C	T	0.467	-0.00854	0.001501	1.30E-08
rs6876982	5	147682118	C	T	0.745	-0.01197	0.001712	2.70E-12
rs62378114	5	148651395	A	T	0.599	0.009403	0.001537	9.40E-10
rs6865418	5	150587346	G	A	0.832	0.011252	0.002015	2.40E-08
rs111782388	5	156629849	C	T	0.913	0.014758	0.00269	4.10E-08
rs11134780	5	156937342	C	T	0.723	0.009085	0.001663	4.70E-08
rs17056301	5	158271680	T	C	0.744	0.011538	0.001714	1.70E-11
rs7734471	5	170787502	T	C	0.789	0.011217	0.001836	1.00E-09
rs11463901	5	171180432	C	CA	0.701	-0.01007	0.001654	1.20E-09
rs11747434	5	172779211	T	C	0.722	-0.00939	0.001676	2.10E-08
rs1966265	5	176516631	G	A	0.754	-0.01158	0.001729	2.10E-11
rs3966800	6	2493113	A	T	0.51	0.008749	0.001493	4.60E-09
rs9379084	6	7231843	G	A	0.885	0.014812	0.002401	6.80E-10
rs6917605	6	19842497	T	C	0.449	0.008443	0.0015	1.80E-08
rs6932932	6	22054517	C	T	0.584	0.009122	0.001662	4.00E-08
rs201025366	6	22138153	GA	G	0.599	-0.01037	0.001535	1.40E-11
rs9295565	6	22742431	A	G	0.802	0.010695	0.001875	1.20E-08
rs4712936	6	25417423	G	T	0.086	-0.01629	0.002666	9.90E-10
rs34555420	6	26090270	G	T	0.901	0.021338	0.002501	1.40E-17
rs2393667	6	26421345	T	C	0.869	0.018129	0.002201	1.80E-16

rs3734537	6	26422627	C	A	0.869	0.018148	0.002206	1.90E-16
rs41269265	6	27425349	T	C	0.888	0.019347	0.002361	2.50E-16
rs55690788	6	28436145	T	C	0.886	0.017892	0.002344	2.30E-14
rs2206853	6	29437033	C	T	0.875	0.01544	0.002253	7.30E-12
rs1071742	6	29910759	T	C	0.714	0.010725	0.001757	1.00E-09
rs3132615	6	30441303	C	T	0.855	0.012858	0.002116	1.20E-09
rs2429722	6	31064305	A	G	0.101	0.015658	0.002408	7.90E-11
rs3117182	6	32066819	T	A	0.153	0.021822	0.002035	7.70E-27
rs2022059	6	32156489	G	C	0.937	-0.01678	0.00307	4.60E-08
rs370927791	6	33621055	CT	C	0.497	-0.01016	0.001591	1.70E-10
rs148889882	6	34141700	C	A	0.961	-0.03192	0.003855	1.20E-16
rs72898495	6	34492668	C	A	0.957	0.022879	0.003892	4.10E-09
rs7764310	6	35123625	G	T	0.982	0.032724	0.00565	7.00E-09
rs9380514	6	35496374	G	A	0.821	0.012584	0.001969	1.70E-10
rs239500	6	80705144	C	T	0.472	0.00829	0.001493	2.80E-08
rs111695532	6	105468219	A	AT	0.848	0.012349	0.002238	3.40E-08
rs2848598	6	109158405	C	T	0.91	0.016224	0.002606	4.80E-10
rs13220304	6	109652236	G	A	0.704	0.010459	0.001632	1.50E-10
rs1557547	6	116720129	T	A	0.268	-0.00931	0.001684	3.30E-08
rs783375	6	117440991	C	A	0.276	-0.0101	0.001668	1.40E-09
rs647444	6	126608815	T	A	0.637	-0.00862	0.001551	2.80E-08
rs9483031	6	129799133	C	A	0.282	-0.00931	0.001658	2.00E-08
rs945890	6	130321899	A	T	0.285	0.010247	0.001656	6.10E-10
rs1114644	6	131145052	T	C	0.335	0.008652	0.001585	4.80E-08
rs2614264	6	135710694	G	A	0.458	-0.00818	0.001496	4.60E-08
rs9385885	6	140192612	G	A	0.804	0.010701	0.001878	1.20E-08
rs56200924	6	141719928	T	C	0.854	-0.01294	0.002204	4.30E-09
rs35999198	6	142338531	A	T	0.797	0.012642	0.001863	1.10E-11
rs76840512	6	152107335	G	T	0.914	-0.01578	0.002678	3.80E-09
rs73625120	6	152435643	G	A	0.963	-0.02196	0.003953	2.80E-08
rs9371865	6	155447335	A	G	0.813	0.010568	0.00191	3.10E-08
rs11752921	6	158649121	C	T	0.787	-0.01129	0.00183	6.80E-10
rs981010	6	169572602	G	A	0.34	0.008866	0.001574	1.80E-08
rs61465425	7	7183569	C	T	0.798	-0.01067	0.001868	1.10E-08
rs56239045	7	14831563	T	G	0.917	0.015157	0.002718	2.40E-08
rs7806296	7	18344095	G	A	0.638	0.00878	0.001555	1.60E-08
rs12674423	7	18518252	G	A	0.807	0.010383	0.00189	3.90E-08
rs433	7	19038319	G	A	0.556	-0.00988	0.001505	5.20E-11
rs80003387	7	23347880	G	A	0.937	-0.01704	0.003073	2.90E-08
rs2007863	7	46332329	T	C	0.653	0.008607	0.001566	3.90E-08
rs17855988	7	73474825	G	C	0.901	-0.01573	0.002541	6.00E-10
rs5885811	7	92235951	A	AT	0.298	0.01007	0.001707	3.70E-09
rs10487888	7	140499107	C	T	0.439	0.008387	0.001502	2.30E-08
rs7795051	7	150504341	A	T	0.73	-0.00948	0.001691	2.10E-08
rs12533568	7	156067051	G	A	0.71	0.010672	0.001649	9.60E-11
rs2979204	8	8298857	T	C	0.629	0.008906	0.001557	1.10E-08
rs35233861	8	9558447	T	C	0.351	-0.00911	0.00157	6.60E-09

rs7821006	8	10809726	C	G	0.38	-0.0089	0.001568	1.40E-08
rs13267552	8	11812454	T	C	0.309	-0.00884	0.001619	4.70E-08
rs137901132	8	13326350	A	T	0.907	0.015771	0.00263	2.00E-09
rs17813588	8	56946546	C	T	0.853	-0.01567	0.002136	2.20E-13
rs16919100	8	69578637	T	C	0.818	0.010554	0.001933	4.80E-08
rs4735761	8	78097161	A	C	0.715	-0.01006	0.001652	1.10E-09
rs10283100	8	120596023	A	G	0.056	-0.02376	0.003258	3.00E-13
rs11783086	8	123980448	T	C	0.646	-0.00874	0.001567	2.40E-08
rs9643242	8	130028600	G	A	0.846	-0.01173	0.002069	1.40E-08
rs10808583	8	130718020	G	A	0.797	0.015706	0.00186	3.10E-17
rs7464407	8	135487008	A	T	0.663	-0.00899	0.001583	1.40E-08
rs4741891	9	4104139	A	G	0.775	-0.01023	0.001788	1.10E-08
rs72718109	9	16984590	G	C	0.742	-0.01084	0.001727	3.50E-10
rs57403314	9	23576702	C	T	0.672	-0.00907	0.001591	1.20E-08
rs4590515	9	83714360	C	T	0.746	-0.00953	0.001729	3.50E-08
rs7036107	9	92177897	A	G	0.489	0.010409	0.001519	7.40E-12
rs10992998	9	96702632	A	G	0.879	0.013388	0.002309	6.70E-09
rs7034400	9	96914608	C	G	0.922	-0.0167	0.002777	1.80E-09
rs357564	9	98209594	G	A	0.662	0.008981	0.001575	1.20E-08
rs4743150	9	100740124	C	T	0.78	0.009986	0.001798	2.80E-08
rs2417687	9	108923457	A	G	0.522	0.008664	0.001495	6.90E-09
rs10978435	9	108949159	T	C	0.683	0.008759	0.001605	4.80E-08
rs7033617	9	118287508	G	A	0.716	-0.00957	0.001656	7.70E-09
rs1507909	9	119187459	G	A	0.767	0.009828	0.001768	2.70E-08
rs2519093	9	136141870	C	T	0.815	0.01182	0.001919	7.30E-10
rs10858244	9	139082796	G	A	0.704	-0.00911	0.001636	2.50E-08
rs4750169	10	12165461	G	A	0.556	-0.00827	0.00151	4.30E-08
rs2772435	10	28835463	G	A	0.201	0.010262	0.00186	3.50E-08
rs2994658	10	31135644	G	A	0.802	-0.01044	0.001871	2.40E-08
rs12264039	10	32226455	T	C	0.753	-0.00944	0.001726	4.60E-08
rs77029323	10	64449879	G	T	0.596	0.008571	0.001532	2.20E-08
rs10998449	10	70589478	C	T	0.593	-0.00872	0.001526	1.10E-08
rs28417886	10	75446665	G	T	0.248	0.011173	0.001736	1.20E-10
rs10824415	10	78174967	T	C	0.443	0.009387	0.001501	4.00E-10
rs753270	10	80964975	T	C	0.416	0.008305	0.00152	4.70E-08
rs11186505	10	92982908	G	A	0.72	-0.00924	0.001659	2.60E-08
rs4918429	10	94899784	C	G	0.623	0.008795	0.001546	1.30E-08
rs12265242	10	98657741	C	T	0.894	-0.01326	0.002426	4.60E-08
rs200223381	10	102601440	T	TTAAA	0.625	-0.00915	0.001627	1.90E-08
rs3802725	10	102673063	G	T	0.571	-0.00877	0.001508	6.10E-09
rs11191243	10	103993035	G	A	0.796	-0.01057	0.00185	1.10E-08
rs10883922	10	105595430	C	G	0.644	0.009827	0.00156	3.00E-10
rs72840788	10	121415685	G	A	0.785	0.013178	0.001829	5.90E-13
rs4584512	10	123878786	G	C	0.283	0.009179	0.001668	3.70E-08
rs76047227	10	124202296	A	C	0.908	0.015681	0.002584	1.30E-09
rs3741213	11	2159248	C	A	0.578	-0.0085	0.001546	3.90E-08
rs68168878	11	9079092	G	A	0.789	-0.01034	0.001831	1.60E-08

rs4141920	11	30449319	G	A	0.545	0.008245	0.001499	3.80E-08
rs55670730	11	43620008	A	T	0.889	0.013569	0.002398	1.50E-08
rs2863159	11	45197060	G	A	0.146	0.012013	0.002115	1.40E-08
rs117372259	11	46304187	A	G	0.969	-0.02491	0.004493	2.90E-08
rs2071304	11	47372377	G	C	0.682	0.009442	0.001609	4.40E-09
rs7115528	11	57653746	T	C	0.566	-0.00825	0.001511	4.80E-08
rs7127546	11	61689731	G	A	0.624	-0.00869	0.001541	1.70E-08
rs138668741	11	64998378	C	T	0.955	-0.0211	0.003789	2.60E-08
rs112567853	11	65735621	A	G	0.979	0.033706	0.005722	3.90E-09
rs61468422	11	66183248	G	A	0.808	-0.01195	0.001899	3.20E-10
rs61734601	11	67184725	G	A	0.917	0.0293	0.002704	2.40E-27
rs491347	11	68169688	G	A	0.257	-0.01053	0.001713	7.90E-10
rs541601	11	126009500	T	C	0.183	-0.01104	0.001927	1.00E-08
rs3782812	12	3339809	C	G	0.902	-0.01634	0.002511	7.70E-11
rs11062590	12	3355168	C	G	0.907	-0.01486	0.002593	1.00E-08
rs76895963	12	4384844	T	G	0.979	-0.05094	0.00577	1.10E-18
rs11049353	12	28266823	A	G	0.434	-0.00831	0.001505	3.40E-08
rs1438909	12	30751112	T	C	0.414	-0.00975	0.00152	1.40E-10
rs2045556	12	46673433	A	G	0.322	-0.00878	0.0016	4.10E-08
rs11170394	12	53463972	T	C	0.914	-0.01504	0.002671	1.80E-08
rs2069408	12	56364321	A	G	0.663	0.009438	0.001576	2.10E-09
rs17178006	12	65718299	T	G	0.885	0.015482	0.002336	3.40E-11
rs10878321	12	66119783	T	G	0.863	-0.01263	0.002169	5.80E-09
rs12298541	12	66306441	A	C	0.391	0.009867	0.001565	2.90E-10
rs1240293	12	70278895	T	A	0.425	-0.00868	0.001517	1.10E-08
rs12810608	12	85674707	G	A	0.689	-0.00907	0.001644	3.50E-08
rs11614062	12	93956672	A	T	0.803	-0.01564	0.001879	8.40E-17
rs4567531	12	102399379	A	C	0.822	-0.01123	0.001955	9.20E-09
rs1920562	12	114660658	T	C	0.634	-0.00886	0.001555	1.20E-08
rs12810788	12	116196322	G	A	0.202	-0.01156	0.001897	1.10E-09
rs139450663	12	122919912	A	AAAATAAAT	0.379	-0.00894	0.001548	7.60E-09
rs193054544	13	50125997	T	C	0.983	-0.04525	0.005868	1.20E-14
rs138849813	13	50478555	A	G	0.986	0.0356	0.006402	2.70E-08
rs9564940	13	73615590	A	G	0.181	-0.01058	0.001937	4.70E-08
rs1330063	13	91983331	T	C	0.396	0.009626	0.00153	3.20E-10
rs201456102	13	115060597	A	AAC	0.902	0.014789	0.002607	1.40E-08
rs2766	14	24686145	C	T	0.956	-0.02413	0.003663	4.50E-11
rs10143091	14	37454095	A	G	0.714	0.009058	0.001656	4.50E-08
rs4901977	14	60789176	C	T	0.707	-0.00926	0.001657	2.30E-08
rs12437043	14	68562792	T	C	0.819	0.010673	0.001943	4.00E-08
rs2286425	14	74815239	C	T	0.477	0.010469	0.001492	2.30E-12
rs11628180	14	93068516	G	A	0.709	-0.01032	0.001665	5.80E-10
rs10150807	14	93489600	T	A	0.884	0.014756	0.002357	3.90E-10
rs28929474	14	94844947	C	T	0.98	-0.03207	0.00537	2.30E-09
rs77235285	14	101198609	C	T	0.887	0.013832	0.002379	6.10E-09
rs4337253	15	71609306	G	C	0.665	0.009493	0.001582	2.00E-09
rs3784310	15	72103427	T	C	0.718	-0.00913	0.00167	4.60E-08

rs11854314	15	74101300	C	T	0.89	0.013408	0.002411	2.70E-08
rs60084071	15	74168741	G	T	0.676	-0.00897	0.001632	3.90E-08
rs3809547	15	75628841	C	G	0.247	0.009513	0.001734	4.10E-08
rs72736802	15	78719501	A	T	0.652	0.009575	0.001579	1.30E-09
rs2890313	15	83417453	C	A	0.217	-0.01	0.001818	3.80E-08
rs2562784	15	84286492	A	G	0.788	-0.01304	0.001826	9.40E-13
rs28705374	15	84558676	A	G	0.836	-0.01781	0.002019	1.10E-18
rs56238630	15	89386224	T	C	0.971	0.028264	0.004437	1.90E-10
rs7176647	15	99177595	C	G	0.4	0.009355	0.001539	1.20E-09
rs12440706	15	100512828	A	G	0.683	-0.00959	0.001683	1.20E-08
rs12901204	15	100756407	G	A	0.675	-0.00958	0.001596	2.00E-09
rs142054940	16	1303110	T	C	0.946	-0.01964	0.003597	4.80E-08
rs61390622	16	3579757	AAT	A	0.9	0.013884	0.002518	3.50E-08
rs841217	16	4746392	T	C	0.458	0.008351	0.001502	2.70E-08
rs7198383	16	8619750	C	T	0.315	-0.00882	0.001611	4.40E-08
rs12935657	16	11219041	G	A	0.753	-0.00969	0.001733	2.20E-08
rs30236	16	14398176	T	C	0.419	-0.00885	0.001541	9.40E-09
rs11645367	16	30770074	C	T	0.888	0.014362	0.002364	1.20E-09
rs372312836	16	69166366	G	GC	0.711	0.009031	0.001656	4.90E-08
rs77503552	16	69551631	A	T	0.535	-0.01205	0.001516	1.90E-15
rs11645016	16	75311828	C	T	0.359	0.00941	0.001578	2.50E-09
rs6564516	16	78225364	C	A	0.31	0.009623	0.001615	2.50E-09
rs1424112	16	79171956	A	G	0.859	-0.01316	0.002138	7.40E-10
rs4782422	16	88754670	G	A	0.878	0.015693	0.002325	1.50E-11
rs59096313	17	1661829	T	C	0.655	-0.00944	0.001599	3.50E-09
rs8753	17	7417640	C	T	0.979	-0.02939	0.005303	3.00E-08
rs2013184	17	30173581	T	G	0.121	0.013163	0.002288	8.70E-09
rs8069671	17	36826936	G	T	0.61	0.009757	0.001528	1.70E-10
rs17683692	17	42884957	A	T	0.828	-0.01124	0.001979	1.30E-08
rs9894577	17	43223292	G	A	0.683	0.009272	0.001606	7.80E-09
rs1230064	17	43461460	A	G	0.533	0.008481	0.001493	1.40E-08
rs62071452	17	44477277	C	T	0.769	0.02208	0.001917	1.10E-30
rs8065797	17	46126265	C	G	0.892	-0.01371	0.00241	1.30E-08
rs17631394	17	61646000	G	A	0.737	-0.01244	0.001701	2.60E-13
rs372982779	17	61816194	A	AAATAAT	0.757	-0.01265	0.00177	8.90E-13
rs753917	17	62673136	C	T	0.252	0.009429	0.001726	4.70E-08
rs12949046	17	63555147	C	G	0.438	-0.00857	0.001504	1.20E-08
rs7222314	17	69104938	A	G	0.458	0.009392	0.001499	3.80E-10
rs62091797	17	73470613	T	G	0.862	-0.0126	0.002169	6.20E-09
rs11373776	17	79369458	A	AT	0.331	-0.00969	0.0016	1.40E-09
rs151015592	17	79841732	C	CA	0.897	0.016698	0.002677	4.40E-10
rs35013462	18	8787156	A	C	0.822	0.010922	0.001991	4.10E-08
rs4800123	18	20010241	C	G	0.582	-0.00869	0.001525	1.20E-08
rs9965550	18	22217466	T	C	0.663	-0.00868	0.001583	4.10E-08
rs1786812	18	35086406	G	C	0.302	-0.01054	0.00164	1.30E-10
rs977143	18	38028165	G	A	0.632	-0.00851	0.001547	3.90E-08
rs549201	18	46806107	C	T	0.333	-0.0088	0.001584	2.80E-08

rs9952089	18	50619266	A	G	0.365	-0.00849	0.00155	4.30E-08
rs4940436	18	56644453	C	G	0.981	0.031115	0.005533	1.90E-08
rs142143832	19	4047334	T	TC	0.879	-0.01437	0.002475	6.40E-09
rs2602713	19	4910021	A	C	0.56	-0.00873	0.001517	8.80E-09
rs11673177	19	8627490	G	A	0.767	0.011146	0.001806	6.80E-10
rs1982074	19	10668673	A	G	0.819	0.010755	0.00194	3.00E-08
rs404584	19	41091145	A	G	0.52	-0.00885	0.001495	3.20E-09
rs16975663	19	42593716	A	G	0.882	0.012937	0.002317	2.40E-08
rs12721051	19	45422160	C	G	0.812	-0.01087	0.001909	1.20E-08
rs73057141	19	55970574	G	C	0.97	0.028096	0.004452	2.80E-10
rs2149951	20	6417695	C	T	0.537	0.00833	0.001499	2.70E-08
rs6140338	20	7585932	T	A	0.574	0.008855	0.001528	6.80E-09
rs627691	20	10485091	T	C	0.398	0.008337	0.001529	4.90E-08
rs6109858	20	13384237	C	T	0.31	-0.00892	0.00162	3.80E-08
rs6047280	20	21143935	G	T	0.328	0.008701	0.001591	4.60E-08
rs67028492	20	30691937	T	C	0.857	0.01169	0.002135	4.40E-08
rs2065703	20	31966698	C	T	0.84	0.01397	0.002044	8.10E-12
rs6087571	20	32912091	A	G	0.864	-0.01502	0.002211	1.10E-11
rs1406947	20	33969530	C	T	0.382	0.008527	0.001537	2.90E-08
rs3091552	20	45440006	C	G	0.265	0.012027	0.001733	4.00E-12
rs13038477	20	47432799	C	T	0.658	-0.00953	0.001577	1.50E-09
rs6095726	20	48595652	A	G	0.806	0.010475	0.001887	2.90E-08
rs45577732	20	61983934	C	G	0.921	0.015429	0.002777	2.80E-08
rs3859579	20	62301795	A	G	0.33	0.009438	0.001588	2.80E-09
rs11909473	21	16547435	A	G	0.71	-0.00939	0.001654	1.30E-08
rs2236610	21	36060668	C	G	0.8	0.010587	0.001869	1.50E-08
rs4819649	22	18396329	A	C	0.303	0.009322	0.001633	1.10E-08
rs2283847	22	28181399	C	T	0.446	0.010464	0.001541	1.10E-11
rs35755679	22	29570556	T	A	0.964	-0.02256	0.004084	3.30E-08
rs12537	22	30423460	C	T	0.639	-0.00868	0.001555	2.40E-08
rs41311445	22	42070374	A	C	0.904	0.01665	0.002536	5.20E-11
rs6611385	23	54906780	C	T	0.342	0.008587	0.0013	4.00E-11

FVC SNPs in MVMR (after clumping)

SNP	CHR	BP	effect_allel	other_allel	EAF	BETA	SE	P_VALUE
rs262695	1	2144788	A	G	0.68	0.011777	0.001926	8.50E-10
rs9442580	1	9339467	C	T	0.87	-0.01761	0.00264	6.90E-11
rs3748576	1	10342629	G	A	0.39	-0.01016	0.001814	1.60E-08
rs2021196	1	16905978	C	T	0.41	0.013859	0.002288	1.30E-09
rs1995312	1	19820158	G	A	0.75	-0.0114	0.002033	4.30E-08
rs12407439	1	22347396	A	G	0.84	-0.01572	0.002435	2.10E-10
rs2473321	1	22390577	T	C	0.24	0.014131	0.002061	1.70E-11
rs2744747	1	22571462	T	C	0.24	-0.01199	0.002077	3.60E-09
rs10917335	1	23294136	A	G	0.67	0.012089	0.001891	2.40E-10
rs61775365	1	26341297	C	G	0.79	-0.0135	0.00216	1.80E-10
rs12729961	1	26762049	C	T	0.79	0.015711	0.002167	7.50E-14
rs12022363	1	38252609	A	G	0.74	0.0118	0.002012	1.20E-08
rs4660400	1	40775106	G	A	0.85	0.015202	0.002542	1.90E-09
rs151022604	1	41426658	C	T	0.98	-0.03594	0.006126	1.40E-09
rs201408120	1	46768864	G	C	0.98	-0.03461	0.006341	3.50E-08
rs150179916	1	50831095	G	A	0.99	-0.05477	0.00966	1.70E-08
rs41292521	1	51873967	G	A	0.98	-0.03258	0.005858	1.80E-08
rs2474391	1	61854675	A	G	0.73	0.011944	0.002001	2.20E-09
rs72641150	1	68262843	A	G	0.75	0.011461	0.002059	4.40E-08
rs202097262	1	78160252	T	A	0.24	-0.01227	0.002138	7.90E-09
rs11466542	1	92372768	T	C	0.69	-0.01089	0.001908	1.10E-08
rs12144044	1	113248791	C	A	0.73	-0.01289	0.001977	1.40E-10
rs11205277	1	149892872	A	G	0.56	-0.01023	0.001779	1.30E-08
rs7554367	1	150019580	G	A	0.16	-0.01337	0.002415	1.00E-08
rs12402939	1	150615094	A	C	0.61	-0.01386	0.001812	3.80E-14
rs7531602	1	151217329	G	A	0.98	-0.03333	0.00567	1.50E-09
rs11264341	1	155151493	C	T	0.57	0.011389	0.001781	4.10E-11
rs6686129	1	165591948	T	C	0.33	0.010739	0.001888	2.00E-08
rs17346452	1	172053287	T	C	0.72	-0.01168	0.001961	9.20E-09
rs145764789	1	172280452	A	ATGTGTG	0.79	-0.02071	0.002167	7.90E-21
rs2811284	1	178698336	T	G	0.32	0.012514	0.001897	1.00E-11
rs11589041	1	180898372	C	T	0.56	0.010745	0.001789	6.60E-10
rs35418511	1	183982307	G	C	0.91	0.019201	0.003245	1.70E-09
rs10640159	1	204448441	C	CCTCT	0.2	0.012372	0.002219	5.60E-09
rs3753592	1	218458058	T	C	0.57	-0.01328	0.001783	1.60E-14
rs2798631	1	218611878	A	G	0.51	-0.01234	0.001777	7.50E-12
rs17512031	1	218879235	T	C	0.82	0.013612	0.002339	7.20E-09
rs11118327	1	219692313	C	T	0.66	0.011365	0.001871	6.10E-10
rs9431040	1	221152299	T	C	0.28	0.011902	0.001971	5.70E-10
rs61833064	1	227564847	G	A	0.83	0.015786	0.002356	4.10E-11
rs3885668	2	10178479	C	T	0.44	0.011039	0.001784	2.10E-10
rs6709127	2	18679689	C	A	0.81	-0.01235	0.002239	4.30E-08
rs3795936	2	23879268	A	C	0.79	0.011983	0.002178	1.20E-08
rs6715626	2	23891551	G	A	0.15	-0.01549	0.002463	8.20E-10
rs11895626	2	24892032	T	C	0.8	-0.01385	0.002192	1.70E-10
rs34231276	2	25921237	A	C	0.95	0.022077	0.004043	5.60E-08

rs71409605	2	33469927 T	TTATC	0.51	-0.01014	0.001788	1.30E-08
rs4670549	2	36614154 C	T	0.6	0.01088	0.001803	6.40E-09
rs12620308	2	36769028 G	A	0.67	-0.01418	0.00187	6.80E-14
rs6544497	2	42236063 A	G	0.67	-0.01034	0.001883	2.20E-08
rs55864937	2	46886510 T	G	0.79	-0.01239	0.002163	1.90E-08
rs75439527	2	48388666 G	A	0.88	0.015367	0.002717	1.20E-08
rs139591697	2	55839855 C	T	0.95	0.023989	0.004265	1.00E-08
rs192572855	2	55869517 G	A	0.99	0.047571	0.008218	6.90E-09
rs1986260	2	55937866 A	G	0.94	-0.0246	0.003899	7.10E-10
rs7570007	2	70198870 A	C	0.5	0.010367	0.00179	6.60E-09
rs7590738	2	71525698 G	A	0.43	0.011957	0.001787	3.20E-11
rs183743021	2	97283676 T	C	0.98	0.033462	0.00593	8.70E-08
rs10171677	2	135446390 A	G	0.46	0.009778	0.001771	1.40E-08
rs72970243	2	136484232 G	A	0.88	-0.01549	0.002703	2.50E-09
rs76844415	2	156991269 C	G	0.86	0.015211	0.002573	2.80E-09
rs111231217	2	161771136 G	T	0.88	0.015242	0.002746	3.20E-08
rs12621769	2	171764397 T	C	0.35	-0.01094	0.001858	1.10E-08
rs7573334	2	178151165 T	C	0.79	0.013054	0.002181	2.40E-09
rs76338508	2	178741459 C	T	0.97	-0.03238	0.005397	2.80E-09
rs9333289	2	187498107 T	C	0.72	-0.0112	0.001972	1.10E-08
rs13408846	2	199684488 T	C	0.54	0.01687	0.001859	3.90E-20
rs2882486	2	202964380 G	A	0.46	0.010296	0.001784	9.70E-09
rs12994746	2	218395037 A	G	0.83	0.013414	0.002439	5.30E-08
rs10168611	2	218695846 G	A	0.6	0.01151	0.001819	1.50E-10
rs4791	2	219138940 C	T	0.44	-0.01063	0.001781	7.50E-09
rs34439826	2	225028788 C	A	0.87	0.015983	0.002657	3.50E-09
rs143599044	2	226907069 T	A	0.99	0.055222	0.009386	2.30E-09
rs6437017	2	232327584 C	A	0.55	0.011803	0.001778	3.40E-11
rs16828538	2	232812717 G	A	0.83	0.013112	0.002383	6.50E-08
rs71049517	2	241674803 A	ACCAGCTG	0.77	-0.01283	0.002181	7.50E-10
rs10207380	2	241860911 A	G	0.33	-0.01129	0.001891	2.90E-09
rs6437235	2	242022530 G	C	0.91	-0.01766	0.003065	2.00E-08
rs9818708	3	161024 T	C	0.8	-0.01224	0.002242	7.50E-08
rs3804992	3	4750489 A	G	0.43	-0.00997	0.00179	3.40E-08
rs1562688	3	8500321 G	T	0.43	-0.01036	0.001792	9.80E-09
rs2974386	3	13695304 C	T	0.49	0.011407	0.001775	4.20E-10
rs4274781	3	32920602 G	C	0.47	0.010223	0.001789	1.90E-09
rs1127898	3	33186356 T	C	0.77	0.012717	0.002121	2.90E-09
rs6764459	3	33260422 C	T	0.91	-0.01886	0.003108	4.70E-10
rs1722845	3	41242367 C	T	0.51	0.009733	0.001769	4.40E-08
rs62261465	3	48551897 G	A	0.94	0.023271	0.003851	4.60E-09
rs7633271	3	49555963 T	C	0.7	-0.01071	0.001919	2.80E-08
rs6762851	3	56686329 T	C	0.64	0.010213	0.001848	2.70E-08
rs202094027	3	67446212 T	A	0.29	-0.01143	0.001953	1.60E-09
rs139681534	3	71462266 A	AAC	0.46	-0.00981	0.001789	6.70E-08
rs11716378	3	72387971 A	T	0.75	0.012449	0.00207	3.80E-09
rs13082809	3	98791847 C	T	0.63	-0.01092	0.001897	1.10E-08

rs329923	3	107386894	G	A	0.62	-0.0102	0.001829	1.10E-08
rs11708067	3	123065778	A	G	0.76	0.011403	0.00206	5.10E-08
rs7428883	3	128983853	A	G	0.22	-0.01813	0.002158	2.70E-17
rs1868164	3	134369420	G	A	0.37	0.010376	0.001835	2.70E-08
rs1679178	3	138156276	C	T	0.15	-0.01423	0.002473	1.50E-08
rs9871963	3	141033481	A	G	0.63	-0.01558	0.001855	9.50E-17
rs62275574	3	156338528	C	A	0.96	0.031784	0.004596	5.80E-12
rs9759167	3	157603008	C	G	0.85	-0.015	0.002501	1.50E-09
rs369358259	3	157837621	C	CTT	0.5	-0.01107	0.001816	3.10E-10
rs879394	3	168709843	G	T	0.77	0.012516	0.002097	3.30E-10
rs79708484	3	169256035	C	T	0.84	0.019445	0.002434	3.00E-15
rs582780	3	172121443	A	G	0.58	-0.01213	0.001806	4.50E-11
rs147676117	3	185259829	G	A	0.89	-0.02199	0.002925	2.50E-14
rs61732778	3	187443314	G	A	0.93	-0.01996	0.003438	1.50E-08
rs12631126	3	196788438	G	A	0.72	-0.0134	0.001979	4.00E-12
rs112069922	4	1034997	C	T	0.95	0.023531	0.004168	2.10E-08
rs2032463	4	2941988	T	C	0.59	-0.01042	0.001801	6.60E-09
rs1203106	4	3461071	T	C	0.89	0.016561	0.002861	6.00E-09
rs1566834	4	13173258	T	C	0.66	-0.01357	0.001868	2.50E-12
rs112992178	4	17622910	C	T	0.94	0.027763	0.003955	3.00E-12
rs112374782	4	17783592	G	A	0.98	0.04501	0.007403	1.30E-09
rs56203712	4	25342606	A	G	0.77	-0.01558	0.002135	6.30E-13
rs1380057	4	55989675	T	A	0.5	-0.01027	0.001799	3.50E-08
rs13112571	4	57724681	G	A	0.75	0.011587	0.002077	3.70E-08
rs237251	4	77645591	T	C	0.38	-0.01092	0.001822	3.40E-09
rs1662835	4	82172449	T	C	0.69	-0.01056	0.001923	6.50E-08
rs11737515	4	89777379	C	G	0.87	-0.01475	0.002591	1.20E-08
rs7436128	4	100447615	G	A	0.75	-0.01121	0.00203	4.80E-08
rs6835942	4	106030934	A	G	0.09	-0.01953	0.003094	3.00E-10
rs72669961	4	106513974	A	G	0.93	-0.02726	0.003563	4.80E-15
rs6819474	4	124857034	T	A	0.17	-0.01286	0.002339	6.80E-08
rs28925904	4	144359490	C	T	0.98	0.036252	0.005669	4.00E-10
rs28429458	4	144417447	G	A	0.8	-0.01348	0.002219	2.20E-09
rs114299372	4	145342355	C	T	0.96	-0.02775	0.004432	2.30E-10
rs1844428	4	145574196	A	G	0.87	0.027542	0.002615	6.80E-26
rs55649972	4	145676901	C	T	0.98	-0.03229	0.005801	2.90E-08
rs1567224	4	146840077	C	T	0.6	-0.00987	0.0018	6.10E-08
rs9997245	4	166309213	T	C	0.72	-0.01278	0.001965	3.10E-10
rs6858486	4	184190535	G	A	0.26	-0.01132	0.002017	2.40E-08
rs516451	5	32851259	C	T	0.62	-0.01091	0.001832	8.10E-09
rs5867460	5	39365347	A	AT	0.59	-0.00988	0.001801	1.40E-08
rs6451628	5	42634714	A	C	0.91	-0.01677	0.003057	2.10E-08
rs6892212	5	44382842	C	A	0.22	0.012725	0.002126	2.20E-09
rs278064	5	53458923	T	C	0.62	0.011256	0.001828	2.40E-10
rs1833797	5	61400197	C	T	0.63	-0.01036	0.001843	1.90E-08
rs80328389	5	63927092	C	A	0.76	0.0115	0.002095	1.90E-08
rs2361311	5	77135904	T	A	0.51	-0.0106	0.001803	6.40E-09

rs4703747	5	77304962	C	G	0.78	0.012801	0.002146	3.10E-09
rs67057219	5	88055490	T	TAGTC	0.41	-0.00986	0.001797	2.50E-08
rs10076022	5	107578213	G	C	0.65	-0.01092	0.001861	6.20E-09
rs6594336	5	108073085	T	C	0.44	-0.01003	0.001782	9.80E-09
rs17475053	5	114995827	C	G	0.73	-0.01146	0.001994	3.70E-09
rs7709626	5	122030711	G	A	0.64	0.010363	0.00185	1.00E-08
rs13156484	5	122653399	G	A	0.53	0.015016	0.00179	9.20E-17
rs35897671	5	127349745	C	T	0.65	-0.01051	0.001862	1.50E-08
rs1363146	5	128880420	A	C	0.91	-0.01779	0.003146	2.60E-08
rs10428576	5	129204669	G	A	0.38	-0.01079	0.001864	9.80E-09
rs6873536	5	133934227	T	C	0.88	0.015316	0.002761	2.40E-08
rs2563285	5	140126137	T	C	0.54	0.009759	0.001789	1.40E-07
rs74590973	5	158253234	G	A	0.92	0.020157	0.003277	2.90E-10
rs2974438	5	168250903	G	A	0.79	0.011983	0.002174	1.80E-08
rs113519421	5	170775458	G	A	0.8	0.013787	0.002253	7.50E-10
rs151182734	5	170884740	ACATTCA	T	0.82	0.014657	0.002374	1.30E-09
rs11463901	5	171180432	C	CA	0.7	-0.01413	0.001963	3.90E-13
rs11747434	5	172779211	T	C	0.72	-0.01178	0.001989	3.50E-09
rs244711	5	176509193	C	T	0.31	-0.01535	0.002045	5.60E-14
rs11739624	5	179727290	T	C	0.39	-0.01001	0.001814	4.00E-08
rs3966800	6	2493113	A	T	0.51	0.01012	0.001771	1.70E-08
rs76623841	6	7107404	C	G	0.92	0.021525	0.003286	2.40E-11
rs147448400	6	19838447	C	A	0.94	-0.0226	0.003711	8.80E-10
rs6932932	6	22054517	C	T	0.58	0.010808	0.001971	2.50E-08
rs201025366	6	22138153	GA	G	0.6	-0.01122	0.001821	1.40E-09
rs2328887	6	25430149	T	C	0.1	-0.0166	0.002931	1.20E-08
rs2235251	6	26431982	C	T	0.87	0.016866	0.00261	8.00E-11
rs34613987	6	27433029	C	T	0.88	0.018548	0.002674	3.50E-12
rs55690788	6	28436145	T	C	0.89	0.015754	0.00278	1.00E-08
rs362538	6	29510630	G	C	0.9	-0.01633	0.002983	1.90E-08
rs3130040	6	30528654	T	A	0.09	0.017925	0.003077	2.30E-09
rs17189819	6	30940125	C	T	0.91	0.016798	0.003076	2.20E-07
rs1048709	6	31914935	A	G	0.2	0.020299	0.002222	2.40E-20
rs9267951	6	32212655	C	T	0.73	0.011441	0.001991	6.40E-09
rs112923147	6	32461871	A	G	0.78	0.014974	0.002742	3.00E-08
rs370927791	6	33621055	CT	C	0.5	-0.01301	0.001888	5.50E-12
rs148889882	6	34141700	C	A	0.96	-0.03989	0.004573	2.40E-18
rs141604279	6	34153882	G	A	0.97	-0.03167	0.005683	1.60E-08
rs147494818	6	34161343	G	C	0.98	-0.03285	0.005901	4.70E-08
rs79872775	6	34791333	T	C	0.97	0.033127	0.005695	8.90E-09
rs78030332	6	34958049	T	C	0.98	0.036888	0.006237	3.90E-09
rs71540126	6	35823766	A	AGTTGGTA	0.74	0.01103	0.002016	2.30E-08
rs1319012	6	41852616	T	A	0.07	0.021215	0.003459	1.40E-09
rs117543859	6	80561019	C	A	0.97	-0.03227	0.005284	1.30E-09
rs58387022	6	81031973	G	T	0.16	0.014284	0.002576	6.10E-08
rs116977982	6	81831801	G	A	0.98	-0.03933	0.006964	1.20E-08
rs6902789	6	105358192	G	A	0.63	-0.01062	0.001839	1.00E-08

rs13220304	6	109652236	G	A	0.7	0.011411	0.001936	3.30E-09
rs514533	6	116712203	C	G	0.26	-0.0118	0.002022	7.70E-09
rs783375	6	117440991	C	A	0.28	-0.01129	0.001979	1.40E-08
rs147127316	6	126484813	G	T	0.92	-0.01866	0.003389	3.00E-08
rs11759026	6	126792095	A	G	0.77	-0.01987	0.002115	2.20E-20
rs9483031	6	129799133	C	A	0.28	-0.01426	0.001967	1.20E-13
rs945890	6	130321899	A	T	0.29	0.014592	0.001965	6.70E-14
rs12527906	6	131112116	A	C	0.59	0.01142	0.001796	4.10E-10
rs6931735	6	135624811	G	A	0.45	-0.01061	0.001795	1.10E-08
rs6904492	6	140202223	T	C	0.72	0.010945	0.001968	6.40E-08
rs12216113	6	142301831	A	G	0.65	0.01104	0.001848	3.60E-09
rs74300198	6	142639613	G	A	0.92	0.024226	0.003233	3.90E-14
rs34810766	6	144937315	C	T	0.81	-0.01267	0.002265	1.60E-08
rs1285055	6	152099699	C	T	0.63	0.010536	0.001835	9.70E-09
rs633891	6	152592751	C	T	0.56	-0.00993	0.001798	4.70E-08
rs9371861	6	155435105	A	C	0.76	0.012173	0.002076	3.70E-09
rs11752921	6	158649121	C	T	0.79	-0.01487	0.00217	9.40E-12
rs1123753	6	169560839	A	C	0.43	0.011161	0.001804	3.30E-10
rs113640408	6	169644408	A	AACAC	0.39	-0.01091	0.001905	4.50E-09
rs12669325	7	889358	T	C	0.87	-0.01465	0.002652	7.00E-08
rs7795126	7	2076626	G	A	0.41	-0.01003	0.001807	5.10E-08
rs798565	7	2752152	G	A	0.7	0.015573	0.001946	2.80E-15
rs763783	7	17025992	C	A	0.95	0.025323	0.004226	7.20E-10
rs7806296	7	18344095	G	A	0.64	0.010194	0.001845	3.50E-08
rs3852256	7	18866844	A	G	0.66	0.011072	0.001878	1.70E-09
rs62448131	7	19041194	G	A	0.75	-0.01635	0.002052	1.40E-15
rs112330055	7	23109316	G	A	0.94	-0.02234	0.003793	2.10E-09
rs1076410	7	23658159	T	G	0.75	0.014074	0.002046	5.20E-12
rs62454414	7	27182329	T	G	0.87	0.014755	0.00263	1.80E-08
rs4549685	7	39326478	C	T	0.67	-0.01053	0.001883	1.70E-08
rs3757840	7	44231216	T	G	0.51	-0.00979	0.001771	4.10E-08
rs13241787	7	46323827	T	C	0.92	0.018465	0.00333	2.50E-08
rs12154498	7	92223518	A	C	0.14	0.015816	0.002524	1.60E-10
rs35926075	7	92367869	C	T	0.83	0.014975	0.002415	1.20E-09
rs10239195	7	98784835	G	C	0.71	0.011426	0.001959	8.50E-09
rs13244560	7	100803267	G	A	0.24	-0.01149	0.002101	3.00E-08
rs8180817	7	114047542	G	C	0.57	-0.00984	0.001798	6.20E-08
rs6464825	7	140222303	G	T	0.79	-0.01294	0.002181	4.70E-09
rs1267641	7	140480063	A	T	0.87	-0.01465	0.002666	4.60E-08
rs73163600	7	150504090	G	C	0.93	-0.01854	0.00338	1.10E-08
rs137901132	8	13326350	A	T	0.91	0.017845	0.003121	4.60E-08
rs4379446	8	21777595	C	G	0.44	0.010064	0.001785	1.10E-08
rs62515386	8	56858274	C	A	0.86	-0.0155	0.002625	7.90E-09
rs7833135	8	57187525	C	T	0.82	0.019623	0.002319	1.20E-17
rs34452910	8	64779862	T	TA	0.65	-0.0106	0.001852	2.70E-08
rs17386888	8	69558467	C	T	0.81	0.013056	0.002275	5.80E-09
rs7821178	8	78093837	C	A	0.66	-0.01294	0.001873	9.00E-12

rs372405573	8	119044360	T	G	0.56	0.009852	0.001807	1.60E-08
rs2447175	8	120357114	A	G	0.19	-0.01244	0.002241	8.90E-09
rs10283100	8	120596023	A	G	0.06	-0.03373	0.003866	8.50E-18
rs7002339	8	123969205	A	C	0.38	-0.01112	0.001862	6.90E-09
rs4452769	8	130708333	C	G	0.44	0.01082	0.001794	6.10E-09
rs147741668	8	135425352	T	TTC	0.74	-0.01262	0.002117	5.10E-09
rs12541381	8	135649848	G	A	0.74	0.01493	0.002023	1.20E-13
rs34074875	8	135652571	G	A	0.84	-0.0145	0.002443	4.10E-09
rs4074678	8	145501485	A	C	0.38	-0.0106	0.001885	5.10E-09
rs1983753	9	4160364	G	A	0.15	-0.01412	0.002501	2.30E-08
rs13294831	9	8095329	G	C	0.84	0.013257	0.002395	3.00E-08
rs2039980	9	15537508	C	G	0.56	-0.01095	0.00179	1.00E-09
rs2056684	9	16978916	A	G	0.26	0.01169	0.002049	2.50E-08
rs7846759	9	33662083	G	T	0.95	-0.02239	0.00397	2.90E-08
rs12348523	9	34711635	G	A	0.84	-0.01404	0.002448	1.10E-08
rs76937529	9	78505692	C	T	0.88	0.017741	0.002762	8.40E-11
rs4590515	9	83714360	C	T	0.75	-0.01196	0.002052	7.50E-09
rs75352790	9	89595177	G	A	0.95	0.022343	0.003927	2.50E-08
rs7036107	9	92177897	A	G	0.49	0.012349	0.001803	4.90E-12
rs10992367	9	95323135	C	T	0.84	0.013071	0.002393	7.50E-08
rs10992984	9	96685120	A	G	0.87	0.015186	0.002664	2.60E-08
rs7034400	9	96914608	C	G	0.92	-0.0203	0.003296	9.10E-10
rs200292470	9	98137552	C	CA	0.91	-0.02268	0.003071	2.90E-13
rs473902	9	98256235	T	G	0.91	0.026007	0.003117	2.00E-16
rs16910750	9	99084471	G	C	0.84	-0.01744	0.002435	2.50E-13
rs1516883	9	108907267	G	A	0.68	0.011025	0.001909	1.30E-08
rs10978435	9	108949159	T	C	0.68	0.011161	0.001905	8.70E-09
rs3001115	9	113403846	T	C	0.21	-0.01259	0.00219	5.10E-09
rs7033617	9	118287508	G	A	0.72	-0.01162	0.001966	2.70E-09
rs34499708	9	119241165	G	A	0.77	-0.01221	0.002101	2.30E-09
rs72755139	9	126119253	A	G	0.52	-0.00993	0.00178	1.10E-08
rs2519093	9	136141870	C	T	0.81	0.013313	0.002278	1.30E-08
rs10858244	9	139082796	G	A	0.7	-0.01366	0.001942	1.30E-12
rs11257593	10	12241815	A	G	0.47	-0.01031	0.001791	4.20E-09
rs946711	10	21806832	A	C	0.67	0.010616	0.001895	1.20E-08
rs2772435	10	28835463	G	A	0.2	0.012338	0.002208	3.20E-08
rs7908877	10	29563284	T	C	0.89	-0.01621	0.002868	1.80E-08
rs2642194	10	31290613	T	A	0.44	-0.0101	0.001787	2.80E-08
rs10740020	10	62052544	C	G	0.39	-0.01002	0.001825	8.00E-08
rs201812121	10	64465575	C	T	0.6	0.010711	0.001844	4.60E-09
rs12357585	10	70446914	C	G	0.6	-0.01036	0.001833	9.70E-09
rs11000744	10	75449059	C	G	0.25	0.011655	0.002064	2.70E-08
rs9919400	10	78214099	G	A	0.56	0.010032	0.001785	3.60E-08
rs2165046	10	79552092	C	T	0.63	0.010239	0.001841	1.20E-08
rs753270	10	80964975	T	C	0.42	0.010278	0.001805	1.60E-08
rs6480931	10	81108482	T	C	0.5	0.00992	0.00177	3.60E-08
rs11186505	10	92982908	G	A	0.72	-0.0135	0.00197	1.40E-11

rs11274403	10	94883470	A	AGTCCCAG	0.66	0.01027	0.001877	3.70E-08
rs12217775	10	102646010	A	G	0.57	-0.01101	0.001786	2.30E-10
rs75630054	10	104430386	A	C	0.93	-0.01904	0.00349	1.30E-08
rs10883922	10	105595430	C	G	0.64	0.010543	0.001853	9.50E-09
rs72840788	10	121415685	G	A	0.78	0.012957	0.002172	3.10E-09
rs7097124	10	124034779	G	A	0.93	0.019454	0.003547	3.40E-08
rs3213216	11	2158179	T	C	0.37	0.010607	0.001858	6.50E-09
rs11603589	11	14217874	G	A	0.92	-0.01801	0.003296	4.60E-08
rs12273776	11	18396318	C	T	0.9	0.017021	0.00292	7.80E-09
rs11031002	11	30215261	T	A	0.87	-0.01582	0.002621	1.10E-09
rs2679059	11	43599791	A	T	0.4	-0.01036	0.001811	9.10E-09
rs112466380	11	45209350	CGTGT	C	0.3	0.011032	0.00196	1.70E-08
rs79728014	11	46062245	A	G	0.85	-0.01455	0.002489	2.20E-09
rs4576779	11	47121547	C	G	0.86	-0.0141	0.00252	4.00E-08
rs201579482	11	47708693	AT	A	0.56	-0.00985	0.001799	4.30E-08
rs2509961	11	62310909	T	C	0.62	-0.01078	0.001828	1.10E-09
rs566908	11	64837370	C	T	0.53	-0.00992	0.001777	8.10E-08
rs12416952	11	65785476	T	C	0.76	0.013456	0.002083	1.80E-10
rs117777720	11	66196384	C	T	0.76	-0.01276	0.002082	6.60E-10
rs149455081	11	67226065	C	T	0.97	0.039453	0.005521	2.60E-13
rs35156880	11	67382429	C	T	0.95	0.038883	0.00415	8.30E-21
rs4988321	11	68174189	G	A	0.95	0.028624	0.004008	1.40E-12
rs668347	11	75275479	T	G	0.14	0.013921	0.002552	9.90E-08
rs11018639	11	89249939	G	T	0.65	0.010721	0.001869	6.90E-09
rs1293672	11	125461034	A	G	0.12	0.015095	0.002741	4.90E-08
rs67232546	11	128398938	C	T	0.79	0.013543	0.002181	1.10E-09
rs10773924	12	1207223	C	T	0.34	-0.01026	0.001873	1.10E-07
rs12306442	12	1493168	G	A	0.92	0.017738	0.003193	2.30E-08
rs11062561	12	3305091	C	A	0.74	0.011611	0.002025	2.30E-08
rs3782812	12	3339809	C	G	0.9	-0.02343	0.00298	3.60E-15
rs75616205	12	4316171	A	G	0.97	-0.03185	0.005782	1.80E-08
rs7969505	12	12827900	G	C	0.89	0.015463	0.002806	3.20E-08
rs2066827	12	12871099	T	G	0.77	0.011695	0.00209	3.40E-08
rs7133921	12	20540700	G	T	0.22	-0.01163	0.002126	7.20E-08
rs7969959	12	20665357	G	A	0.36	0.010052	0.001842	4.50E-08
rs11049211	12	28041612	G	A	0.97	-0.02828	0.005046	1.40E-08
rs2054474	12	28254212	T	G	0.77	-0.01151	0.0021	5.30E-08
rs1438909	12	30751112	T	C	0.41	-0.01173	0.001803	8.40E-11
rs2045556	12	46673433	A	G	0.32	-0.01179	0.001898	1.10E-09
rs2278070	12	49943840	C	T	0.91	-0.01702	0.003121	5.10E-08
rs11170394	12	53463972	T	C	0.91	-0.01755	0.003169	2.60E-08
rs1109391	12	54387377	G	T	0.43	-0.00999	0.001786	1.40E-08
rs57343616	12	56623347	C	T	0.94	-0.02233	0.003655	8.90E-10
rs4319546	12	57346828	C	T	0.75	0.011139	0.002033	5.60E-08
rs74968967	12	58358816	A	C	0.96	-0.02499	0.004368	6.80E-09
rs11175709	12	65665574	G	A	0.69	0.011325	0.001913	8.40E-09
rs61921604	12	66317537	C	A	0.9	0.017081	0.003026	1.90E-08

rs12320670	12	85611010	A	G	0.66	-0.01051	0.001865	6.70E-09
rs56672949	12	93948862	T	TG	0.68	-0.01089	0.00191	7.70E-09
rs11107138	12	94023703	A	C	0.79	-0.01624	0.002266	4.20E-13
rs4761530	12	94207294	A	G	0.5	0.012235	0.001766	3.00E-12
rs11110969	12	102096702	C	A	0.87	0.014845	0.002665	2.60E-08
rs2373564	12	102394872	A	T	0.8	-0.0137	0.002211	2.50E-10
rs28439656	12	102981586	T	A	0.26	-0.0122	0.002023	9.50E-10
rs10861684	12	107382029	A	T	0.4	0.010127	0.001813	2.50E-08
rs12313729	12	108405633	A	T	0.77	-0.01152	0.002112	2.20E-07
rs7965766	12	115200670	T	G	0.91	0.016992	0.003078	7.00E-08
rs10850433	12	115495229	C	G	0.77	0.011671	0.002098	1.90E-08
rs674240	12	121048935	G	A	0.6	0.010142	0.001803	6.80E-09
rs2062488	12	122804256	T	C	0.26	-0.01182	0.002046	3.60E-09
rs11061056	12	123450867	G	A	0.97	0.028762	0.005049	3.20E-09
rs558107	13	30172458	A	G	0.41	0.010041	0.001803	8.40E-09
rs193054544	13	50125997	T	C	0.98	-0.06297	0.006967	9.20E-20
rs71190365	13	50764607	C	CTT	0.66	-0.0123	0.001917	5.40E-11
rs1149823	13	51131351	C	T	0.83	-0.01384	0.002351	4.40E-09
rs7324022	13	71609003	G	A	0.68	0.01126	0.001908	2.20E-09
rs11841917	13	73609645	C	T	0.82	0.012579	0.002299	1.30E-07
rs1330063	13	91983331	T	C	0.4	0.012358	0.001817	8.30E-12
rs61969406	13	99116628	G	C	0.77	-0.01183	0.002123	1.60E-08
rs7994556	13	114998076	C	T	0.77	0.012108	0.002093	7.30E-09
rs66995536	14	21564859	G	A	0.83	0.013067	0.002344	1.80E-08
rs2766	14	24686145	C	T	0.96	-0.03146	0.00435	9.20E-13
rs10129948	14	37448052	T	C	0.8	0.012463	0.002201	3.70E-08
rs4901977	14	60789176	C	T	0.71	-0.01479	0.001968	2.30E-14
rs12880103	14	73729784	G	C	0.81	0.01249	0.002289	5.30E-08
rs13379076	14	74810747	T	C	0.24	0.011371	0.002082	8.50E-08
rs11628180	14	93068516	G	A	0.71	-0.01293	0.001977	2.70E-11
rs112635299	14	94838142	G	T	0.98	-0.04681	0.00626	2.90E-13
rs77235285	14	101198609	C	T	0.89	0.0191	0.002825	1.40E-11
rs75300978	15	38541885	T	A	0.93	0.021898	0.003632	7.00E-09
rs11637595	15	40387728	C	T	0.72	0.013679	0.002002	3.50E-11
rs8030680	15	51095313	C	G	0.41	-0.01124	0.001803	6.70E-11
rs35874463	15	67457698	A	G	0.94	-0.02516	0.003789	8.00E-11
rs201688396	15	72088081	T	C	0.36	0.010672	0.001885	1.30E-08
rs8027181	15	73088869	A	T	0.33	0.010786	0.001886	6.60E-09
rs7166220	15	74094248	G	T	0.78	-0.01235	0.002157	7.40E-09
rs72745367	15	74232066	A	G	0.7	-0.01726	0.001931	5.70E-19
rs4886680	15	75594562	A	G	0.26	0.012369	0.002069	2.40E-09
rs57311619	15	76640009	C	T	0.93	-0.02096	0.003513	3.80E-09
rs1191196	15	77646504	C	T	0.76	-0.01177	0.002071	4.40E-09
rs11856878	15	83463093	A	G	0.67	-0.01079	0.001884	4.70E-09
rs12905964	15	84179115	C	T	0.59	-0.01065	0.001809	3.70E-09
rs7166410	15	84382798	C	G	0.78	-0.0148	0.002146	4.00E-12
rs4932426	15	89349539	G	A	0.52	-0.0103	0.001778	3.40E-09

rs11855963	15	89382534	G	A	0.68	0.011664	0.001911	1.30E-09
rs8039139	15	99139189	G	A	0.54	0.010098	0.001788	2.70E-08
rs28456063	15	99181222	C	T	0.96	0.026424	0.0048	2.70E-08
rs12719732	15	100508847	C	G	0.48	-0.0098	0.001781	6.00E-08
rs5026356	15	100749310	C	G	0.63	-0.01038	0.001849	4.70E-09
rs3848364	16	372635	T	G	0.73	0.011032	0.002011	4.10E-08
rs1406815	16	778158	C	G	0.79	-0.01205	0.002178	1.80E-08
rs11077346	16	3550147	C	A	0.71	0.01134	0.001965	3.80E-09
rs841217	16	4746392	T	C	0.46	0.011514	0.001783	5.20E-11
rs79782498	16	8610997	C	G	0.89	0.017548	0.002945	1.90E-09
rs30152	16	14382647	G	T	0.69	-0.01107	0.001919	6.50E-09
rs62057680	16	29986627	T	C	0.92	0.019273	0.003301	9.40E-09
rs12931046	16	30987144	G	A	0.37	-0.01107	0.001833	1.30E-09
rs9745989	16	49888931	T	C	0.37	-0.0114	0.001877	1.30E-09
rs372312836	16	69166366	G	GC	0.71	0.011041	0.001966	6.90E-08
rs77503552	16	69551631	A	T	0.53	-0.01665	0.0018	3.40E-20
rs11861563	16	75209790	G	A	0.41	-0.01047	0.001826	1.30E-08
rs72797414	16	79170967	G	A	0.86	-0.01444	0.002548	1.30E-08
rs11639612	16	81708442	C	T	0.76	0.011804	0.002096	1.20E-08
rs67612167	16	82199598	A	G	0.26	0.011076	0.002013	5.20E-08
rs11863071	16	86984273	T	C	0.83	-0.01307	0.002355	4.40E-08
rs4782422	16	88754670	G	A	0.88	0.016491	0.00276	1.00E-09
rs187720	16	89680337	G	C	0.47	0.010132	0.001828	2.50E-08
rs59096313	17	1661829	T	C	0.65	-0.01129	0.001898	1.20E-08
rs141291482	17	4765760	G	A	0.98	0.031978	0.005796	3.80E-08
rs8753	17	7417640	C	T	0.98	-0.03891	0.006294	1.30E-09
rs55644350	17	27913368	C	T	0.59	-0.01011	0.001812	5.20E-08
rs571799	17	30292174	A	T	0.81	-0.01306	0.002319	8.60E-08
rs12951408	17	36913807	T	C	0.44	-0.01131	0.00179	3.10E-10
rs75097049	17	37388567	C	T	0.94	-0.02047	0.00368	2.50E-08
rs62065255	17	38409081	T	C	0.75	-0.01273	0.002047	5.10E-10
rs76130710	17	42714284	A	G	0.92	-0.01801	0.003268	3.70E-08
rs149455674	17	43149772	C	T	0.94	0.021841	0.003985	2.70E-08
rs145729014	17	43269242	T	C	0.82	-0.01296	0.002343	2.70E-08
rs55938136	17	43798360	A	G	0.78	0.029027	0.002121	2.00E-43
rs2732630	17	44289150	A	C	0.78	0.028908	0.002122	5.20E-43
rs78317601	17	45986496	A	G	0.92	-0.01897	0.003376	2.00E-08
rs919109	17	46675977	G	C	0.86	-0.01414	0.00257	3.70E-08
rs11657101	17	60636826	G	A	0.64	-0.01141	0.001853	1.70E-10
rs28571160	17	61638723	G	T	0.75	-0.01373	0.002044	3.20E-11
rs372982779	17	61816194	A	AAATAAT	0.76	-0.02077	0.002101	1.30E-23
rs199789579	17	62667105	G	GCTCT	0.28	0.016273	0.002086	4.70E-15
rs11869530	17	63549979	G	A	0.36	-0.01073	0.001841	3.20E-09
rs17177255	17	68972281	C	T	0.79	0.012337	0.002165	9.40E-09
rs11654749	17	69125606	G	T	0.59	0.011122	0.001798	1.10E-09
rs2529381	17	69807526	G	C	0.21	0.012546	0.002165	1.50E-08
rs138162499	17	79048067	A	AGTGCCCTG	0.65	0.010362	0.001894	4.90E-08

rs61745998	17	79354342	T	C	0.63	-0.01011	0.001831	2.90E-08
rs142238634	17	79794721	A	G	0.98	0.03983	0.006896	6.40E-09
rs4121583	18	125075	C	T	0.38	-0.01046	0.001884	3.00E-08
rs1876220	18	8800547	G	A	0.32	-0.01044	0.001902	4.80E-08
rs60839038	18	20711927	A	C	0.53	-0.01219	0.001803	7.60E-12
rs17798131	18	22143180	C	T	0.81	-0.01238	0.00227	2.70E-08
rs1786812	18	35086406	G	C	0.3	-0.01189	0.001947	4.10E-10
rs919898	18	38018995	A	G	0.46	-0.01037	0.001786	1.70E-09
rs12457358	18	41459423	G	A	0.66	-0.01022	0.00187	8.00E-08
rs549201	18	46806107	C	T	0.33	-0.01048	0.001881	5.00E-08
rs6417120	18	50555225	C	A	0.37	-0.01185	0.001838	6.10E-11
rs4940436	18	56644453	C	G	0.98	0.041417	0.00657	3.70E-10
rs34707868	19	996566	A	AC	0.88	-0.01535	0.002794	2.10E-08
rs72976952	19	4024525	G	A	0.84	-0.01384	0.002443	1.10E-08
rs12972366	19	4920414	A	G	0.75	0.012953	0.002049	5.00E-10
rs11673177	19	8627490	G	A	0.77	0.017528	0.002145	2.80E-16
rs8113274	19	10666380	T	A	0.77	-0.01156	0.002097	1.30E-07
rs117404073	19	18399631	A	G	0.87	0.014979	0.002712	1.70E-08
rs420490	19	41089773	C	G	0.54	-0.01239	0.001797	4.70E-12
rs4803520	19	42500373	A	G	0.11	-0.01561	0.002817	4.90E-08
rs484195	19	45421877	A	G	0.38	-0.01014	0.001854	2.50E-08
rs16980051	19	46345886	T	C	0.49	0.009729	0.001773	3.10E-08
rs45583840	19	55902193	G	A	0.91	0.017682	0.003175	2.80E-08
rs6085551	20	6408920	T	C	0.48	-0.00974	0.001778	1.10E-07
rs6140338	20	7585932	T	A	0.57	0.011798	0.001814	4.10E-11
rs1232604	20	10611323	A	G	0.36	0.010292	0.001857	1.80E-08
rs6081869	20	20060745	T	G	0.61	0.010062	0.001844	4.00E-08
rs11696663	20	21065004	C	T	0.41	0.010664	0.001812	4.00E-09
rs293710	20	31939710	C	T	0.32	-0.01093	0.001893	1.50E-08
rs6579167	20	33032915	T	C	0.78	-0.01283	0.002173	6.00E-09
rs639763	20	33861904	C	T	0.8	-0.0128	0.00222	4.60E-09
rs811657	20	44450199	T	C	0.34	-0.01031	0.001876	3.30E-08
rs12481092	20	45486817	C	T	0.73	-0.01576	0.002011	3.60E-15
rs4809724	20	47355462	G	A	0.78	-0.01179	0.002145	7.90E-08
rs6091076	20	48592317	A	G	0.88	0.015398	0.002735	1.90E-08
rs310630	20	62195087	A	G	0.56	0.01108	0.001793	8.60E-10
rs7282135	21	16541185	A	C	0.64	-0.01019	0.001856	4.50E-08
rs2236610	21	36060668	C	G	0.8	0.012651	0.002219	8.70E-09
rs73390986	22	30135928	T	C	0.9	-0.01763	0.003028	9.40E-09
rs4820296	22	38104705	A	T	0.39	-0.01041	0.001833	1.20E-08
rs5757355	22	39300265	T	C	0.77	-0.01183	0.002111	9.20E-09
rs6611385	23	54906780	C	T	0.34	0.010372	0.001544	1.10E-11

Height SNPs for MVMR (after clumping)

SNP	CHR	BP	effect_allele	other_allele	EAF	BETA	SE	P_VALUE
rs3109210	1	954134	G	A	0.66	-0.0083	0.001373	1.50E-09
rs6665973	1	1478880	T	G	0.71	-0.00781	0.001431	4.80E-08
rs3107129	1	2025043	C	T	0.68	-0.00921	0.001393	3.90E-11
rs6128837	1	2274438	A	G	0.74	0.008524	0.001504	1.40E-08
rs226250	1	8022171	C	T	0.59	0.008946	0.001325	1.50E-11
rs1889854	1	8415235	C	T	0.78	-0.00967	0.001568	6.80E-10
rs1273581	1	9549328	A	G	0.58	0.010011	0.001332	5.80E-14
rs6178292	1	10214089	A	G	0.96	-0.01982	0.00346	1.00E-08
rs7263973	1	17351060	T	C	0.94	0.015916	0.002742	6.50E-09
rs2076616	1	17412501	A	G	0.68	0.015049	0.001397	4.80E-27
rs1240187	1	19789697	C	G	0.72	0.009204	0.001477	4.60E-10
rs1204178	1	19834213	C	T	0.74	-0.00966	0.001484	7.40E-11
rs1502085	1	21409254	G	A	0.79	0.013341	0.001626	2.30E-16
rs1531829	1	21953304	G	A	0.64	-0.00767	0.001356	1.50E-08
rs2445131	1	22239774	T	C	0.38	0.008857	0.001348	5.00E-11
rs2746556	1	23524541	G	A	0.59	0.011495	0.001316	2.40E-18
rs4128433	1	26517267	A	G	0.81	-0.01432	0.001656	5.10E-18
rs945213	1	32047632	G	T	0.36	-0.00814	0.001353	1.80E-09
rs4653175	1	36756491	A	G	0.75	-0.00889	0.001501	3.20E-09
rs1204468	1	38241061	T	A	0.76	0.013983	0.001522	4.00E-20
rs4660550	1	39688459	T	A	0.3	0.007943	0.001415	2.00E-08
rs1088920	1	40708853	A	G	0.65	-0.00863	0.001356	1.90E-10
rs1212097	1	41365445	G	T	0.63	-0.00987	0.001344	2.10E-13
rs7515066	1	42076915	G	A	0.33	0.0095	0.001385	7.00E-12
rs7535305	1	42489602	C	A	0.28	0.008723	0.001437	1.30E-09
rs2453728	1	51460955	T	C	0.66	0.008813	0.001373	1.40E-10
rs1088871	1	51488697	T	C	0.85	-0.0163	0.001804	1.70E-19
rs3590327	1	52265969	C	T	0.93	0.016808	0.002561	5.30E-11
rs6700000	1	52864264	A	T	0.81	-0.00959	0.001666	8.70E-09
rs1045855	1	54950263	T	G	0.4	0.007425	0.001327	2.20E-08
rs3738570	1	56977819	G	A	0.86	-0.01039	0.001893	4.00E-08
rs2474377	1	61875346	C	T	0.86	0.010274	0.001856	3.10E-08
rs7164560	1	65227862	C	A	0.99	-0.04298	0.005794	1.20E-13
rs1212236	1	67361195	A	G	0.91	0.01487	0.002392	5.10E-10
rs7756027	1	77574751	T	C	0.9	-0.01404	0.002174	1.10E-10
rs7536433	1	78023173	C	T	0.79	0.009683	0.001593	1.20E-09
rs1015848	1	85720007	T	C	0.8	0.008912	0.001608	3.00E-08
rs6677315	1	86270803	G	C	0.57	0.009718	0.001312	1.30E-13
rs4411112	1	88607616	A	G	0.1	0.012839	0.002142	2.00E-09
rs1508958	1	89242354	C	T	0.96	0.020025	0.003663	4.60E-08
rs1078283	1	92823598	G	C	0.2	-0.01706	0.001629	1.20E-25
rs1214262	1	1.03E+08	G	A	0.38	0.007455	0.001333	2.30E-08
rs1181101	1	1.03E+08	A	T	0.22	0.014094	0.00156	1.70E-19
rs4970834	1	1.1E+08	C	T	0.81	-0.00948	0.001672	1.40E-08
rs1938275	1	1.19E+08	T	C	0.32	0.010196	0.001407	4.30E-13
rs1701968	1	1.19E+08	A	G	0.06	-0.01593	0.002803	1.30E-08

rs1208639	1	1.19E+08	C	A	0.89	0.011755	0.002034	7.40E-09
rs5980895	1	1.19E+08	A	G	0.86	-0.0106	0.001852	1.00E-08
rs9659196	1	1.2E+08	C	A	0.82	0.017044	0.001707	1.80E-23
rs1124277	1	1.45E+08	C	T	0.89	-0.01295	0.002275	1.30E-08
rs7511885	1	1.47E+08	A	G	0.12	-0.01431	0.001979	4.80E-13
rs1406237	1	1.5E+08	T	C	0.97	-0.02283	0.00397	8.90E-09
rs2853653	1	1.5E+08	C	T	0.85	0.012425	0.001998	5.00E-10
rs7553846	1	1.5E+08	C	T	0.98	-0.05757	0.005419	2.30E-26
rs7609872	1	1.51E+08	T	C	0.92	-0.01995	0.002417	1.50E-16
rs1509905	1	1.51E+08	G	A	0.97	0.025919	0.003696	2.30E-12
rs1143464	1	1.56E+08	C	T	0.98	-0.03054	0.005102	2.20E-09
rs7268775	1	1.65E+08	C	T	0.81	0.010468	0.001665	3.20E-10
rs1423544	1	1.66E+08	G	A	0.97	0.021712	0.003835	1.50E-08
rs1202718	1	1.71E+08	C	T	0.7	-0.00782	0.001429	4.40E-08
rs6181439	1	1.71E+08	T	C	0.82	-0.01155	0.001704	1.20E-11
rs7519749	1	1.72E+08	T	A	0.97	0.020369	0.003676	3.00E-08
rs6180655	1	1.76E+08	A	C	0.53	-0.00788	0.001307	1.70E-09
rs1177623	1	1.77E+08	G	A	0.98	0.027941	0.00503	2.80E-08
rs1131409	1	1.77E+08	C	T	0.98	0.026619	0.004799	2.90E-08
rs5589032	1	1.83E+08	G	C	0.97	0.022338	0.00371	1.70E-09
rs1154900	1	1.84E+08	T	C	0.94	-0.02304	0.002741	4.20E-17
rs7844429	1	1.85E+08	G	A	0.98	0.031802	0.00473	1.80E-11
rs1477560	1	2E+08	A	T	0.41	-0.00882	0.001321	2.40E-11
rs1060060	1	2E+08	C	T	0.71	0.007944	0.00145	4.30E-08
rs1224012	1	2.04E+08	T	C	0.86	-0.01116	0.001888	3.40E-09
rs708727	1	2.06E+08	G	A	0.59	0.010406	0.001318	2.90E-15
rs697000	1	2.12E+08	T	C	0.02	0.030271	0.005312	1.20E-08
rs1204202	1	2.12E+08	G	A	0.8	0.009025	0.001618	2.40E-08
rs1077957	1	2.12E+08	G	C	0.37	0.00781	0.001353	7.70E-09
rs1407659	1	2.19E+08	G	A	0.99	-0.03716	0.006278	3.20E-09
rs4846478	1	2.19E+08	C	G	0.73	-0.02469	0.001459	3.20E-64
rs9431104	1	2.19E+08	C	T	0.73	0.008255	0.001474	2.10E-08
rs7727186	1	2.21E+08	T	C	0.94	-0.01729	0.002886	2.10E-09
rs7517754	1	2.25E+08	A	G	0.22	-0.01616	0.001578	1.30E-24
rs7556096	1	2.28E+08	T	C	0.75	-0.00976	0.001494	6.30E-11
rs9428456	1	2.35E+08	G	A	0.73	0.009541	0.001469	8.40E-11
rs7277262	1	2.43E+08	A	T	0.95	-0.0174	0.00309	1.80E-08
rs7277099	2	13241	T	C	0.9	0.013442	0.002234	1.80E-09
rs6721842	2	1583951	G	A	0.78	0.008611	0.001569	4.10E-08
rs7276354	2	1630835	C	T	0.92	-0.01715	0.002399	8.80E-13
rs1562617	2	6384728	G	A	0.78	0.009058	0.001571	8.10E-09
rs1818780	2	10191761	T	C	0.88	-0.01189	0.00204	5.60E-09
rs5668105	2	19548907	T	C	0.86	0.011059	0.001874	3.60E-09
rs1018343	2	20011411	C	T	0.63	0.007746	0.001345	8.40E-09
rs5591932	2	20193826	A	G	0.9	0.018823	0.002145	1.70E-18
rs6211143	2	20436975	C	T	0.96	-0.01941	0.003281	3.30E-09
rs2176263	2	24092773	G	C	0.4	-0.01527	0.001326	1.00E-30

rs1246822	2	24922359	C	A	0.14	-0.0198	0.00185	1.00E-26
rs2891423	2	25367241	A	G	0.08	0.021989	0.002359	1.10E-20
rs600015	2	31820300	G	C	0.31	-0.00814	0.001404	6.80E-09
rs1037507	2	33357149	G	A	0.06	-0.01563	0.002833	3.50E-08
rs1165371	2	33459937	C	T	0.95	0.03843	0.003106	3.70E-35
rs7509730	2	36644151	G	A	0.94	-0.01624	0.00266	1.00E-09
rs1049027	2	37963194	A	T	0.88	-0.02449	0.002049	6.30E-33
rs1702126	2	37998864	G	C	0.91	0.020504	0.002259	1.10E-19
rs1840462	2	42443492	C	T	0.98	0.025161	0.004359	7.80E-09
rs1322	2	43521167	G	A	0.83	-0.01071	0.001743	7.90E-10
rs1425279	2	44433681	A	T	0.98	-0.02492	0.004484	2.70E-08
rs1169581	2	46730586	G	C	0.76	0.008717	0.001536	1.40E-08
rs6213880	2	48530981	A	G	0.83	0.010639	0.001742	1.00E-09
rs2949814	2	54078980	C	G	0.73	0.009571	0.00146	5.60E-11
rs7566809	2	54571607	C	G	0.2	-0.0091	0.001625	2.10E-08
rs4671944	2	54734249	G	A	0.66	0.007553	0.001373	3.70E-08
rs354198	2	54967970	G	A	0.65	-0.00748	0.00137	4.70E-08
rs7561121	2	56351453	G	T	0.39	-0.01342	0.001339	1.20E-23
rs1700675	2	61406438	A	G	0.85	0.011048	0.001834	1.70E-09
rs2251140	2	65782717	G	A	0.48	-0.00858	0.001302	4.40E-11
rs3518802	2	68338700	G	A	0.87	0.01298	0.00198	5.60E-11
rs7699538	2	69302028	A	G	0.76	0.010889	0.001516	6.90E-13
rs1112621	2	69351621	T	A	0.73	-0.01128	0.001463	1.30E-14
rs4854557	2	69451962	C	T	0.56	-0.00742	0.001319	1.90E-08
rs2418895	2	71436139	G	A	0.44	0.007268	0.001309	2.80E-08
rs6546884	2	74237898	T	A	0.69	0.008061	0.001414	1.20E-08
rs2166530	2	85737362	G	T	0.65	-0.00859	0.00137	3.60E-10
rs6214718	2	86807853	T	G	0.38	-0.00771	0.001357	1.30E-08
rs7563830	2	88836698	G	A	0.82	0.009329	0.00171	4.90E-08
rs1434821	2	95791211	T	C	0.98	0.038293	0.004444	6.80E-18
rs2278206	2	99172244	A	G	0.75	0.008188	0.001501	4.90E-08
rs6543094	2	1.02E+08	T	C	0.23	-0.00991	0.001546	1.40E-10
rs7605606	2	1.03E+08	G	A	0.39	-0.00962	0.001401	6.70E-12
rs4447624	2	1.05E+08	G	A	0.69	-0.01186	0.001413	4.80E-17
rs1983395	2	1.09E+08	G	C	0.32	-0.00837	0.001394	1.90E-09
rs7536701	2	1.22E+08	G	C	0.98	0.024494	0.004477	4.50E-08
rs1020966	2	1.22E+08	G	A	0.88	0.014704	0.002034	4.80E-13
rs2871873	2	1.22E+08	A	G	0.64	0.011418	0.001358	4.10E-17
rs4662713	2	1.28E+08	C	T	0.29	0.007839	0.001434	4.60E-08
rs6738353	2	1.34E+08	G	A	0.31	0.008679	0.0014	5.70E-10
rs1152274	2	1.36E+08	T	C	0.95	0.022432	0.003097	4.40E-13
rs7576037	2	1.42E+08	C	T	0.45	-0.00715	0.001304	4.20E-08
rs2049740	2	1.48E+08	G	C	0.23	0.008359	0.001532	4.90E-08
rs960910	2	1.49E+08	C	A	0.87	0.01091	0.001933	1.70E-08
rs6719208	2	1.57E+08	G	C	0.28	0.00963	0.001448	2.90E-11
rs6432511	2	1.6E+08	G	C	0.26	-0.00814	0.001473	3.20E-08
rs6217726	2	1.61E+08	G	A	0.93	-0.01364	0.002499	4.80E-08

rs11678681	2	1.7E+08	G	A	0.68	0.017068	0.001395	2.00E-34
rs7560889	2	1.72E+08	A	G	0.33	-0.00901	0.001388	8.50E-11
rs11690059	2	1.72E+08	C	A	0.38	0.009853	0.001345	2.40E-13
rs72919341	2	1.75E+08	G	A	0.83	0.011005	0.001735	2.20E-10
rs833152	2	1.83E+08	C	A	0.43	0.007614	0.001313	6.70E-09
rs288324	2	1.84E+08	A	G	0.53	-0.00741	0.001353	4.30E-08
rs17750683	2	1.88E+08	A	T	0.69	-0.00787	0.001407	2.20E-08
rs11488538	2	1.9E+08	C	G	0.98	-0.02452	0.004305	1.20E-08
rs995933	2	1.99E+08	G	A	0.28	-0.00814	0.00147	3.10E-08
rs12996291	2	2E+08	G	A	0.77	-0.0101	0.00156	9.60E-11
rs35731961	2	2E+08	T	C	0.81	0.013593	0.001674	4.60E-16
rs77319661	2	2.03E+08	T	C	0.88	0.01492	0.002014	1.30E-13
rs2887872	2	2.11E+08	C	T	0.55	-0.00792	0.001305	1.30E-09
rs1047891	2	2.12E+08	C	A	0.68	-0.00813	0.001395	5.70E-09
rs13413590	2	2.13E+08	C	T	0.62	-0.00754	0.001337	1.70E-08
rs62181401	2	2.16E+08	G	A	0.89	0.012463	0.002111	3.60E-09
rs60656193	2	2.18E+08	G	A	0.94	-0.01782	0.002827	2.90E-10
rs62174831	2	2.18E+08	A	G	0.71	-0.01276	0.001429	4.20E-19
rs56185026	2	2.18E+08	T	C	0.9	0.012543	0.002213	1.40E-08
rs11644591	2	2.2E+08	T	A	0.98	0.03733	0.004834	1.10E-14
rs11325766	2	2.25E+08	C	T	0.98	-0.03317	0.005058	5.50E-11
rs13016196	2	2.28E+08	T	G	0.38	0.007324	0.001337	4.30E-08
rs4973385	2	2.32E+08	T	C	0.71	0.01059	0.001433	1.40E-13
rs10933371	2	2.32E+08	A	T	0.7	-0.01144	0.001423	8.70E-16
rs11681043	2	2.33E+08	A	G	0.77	0.015207	0.00155	9.90E-23
rs67269491	2	2.33E+08	G	A	0.85	-0.01317	0.001845	9.30E-13
rs4144797	2	2.34E+08	T	C	0.36	0.008945	0.00137	6.60E-11
rs58895259	2	2.4E+08	A	G	0.74	-0.0092	0.001469	3.80E-10
rs78058173	2	2.42E+08	G	A	0.94	0.015977	0.002741	5.50E-09
rs3804992	3	4750489	A	G	0.43	-0.00729	0.001317	3.10E-08
rs193921	3	8931038	A	T	0.17	-0.00985	0.001716	9.70E-09
rs2728923	3	9403515	G	T	0.14	-0.01116	0.001873	2.50E-09
rs783494	3	9962157	T	C	0.45	-0.00729	0.001314	2.90E-08
rs12493221	3	11627016	G	A	0.05	-0.02487	0.002904	1.10E-17
rs9862177	3	12519202	C	T	0.5	0.008351	0.001302	1.40E-10
rs520417	3	23034968	A	G	0.91	-0.01368	0.00234	5.10E-09
rs4858572	3	24050987	G	A	0.54	-0.00734	0.001312	2.20E-08
rs7619139	3	25110415	T	A	0.41	-0.00773	0.001327	5.60E-09
rs1857883	3	30052399	G	A	0.46	-0.00719	0.001312	4.20E-08
rs1127898	3	33186356	T	C	0.77	0.011872	0.001561	2.80E-14
rs4515003	3	37013231	C	G	0.47	0.007602	0.001306	5.90E-09
rs6800234	3	37794693	T	C	0.67	0.007731	0.001383	2.30E-08
rs7629707	3	37999745	G	A	0.93	-0.01572	0.00248	2.30E-10
rs406664	3	41186405	T	G	0.43	0.011593	0.001339	4.70E-18
rs55977641	3	43186463	G	A	0.84	0.009865	0.001778	2.90E-08
rs11929341	3	45492119	A	T	0.66	-0.00809	0.001378	4.30E-09
rs55786350	3	46983288	G	A	0.8	0.017401	0.001643	3.30E-26

rs1428165	3	47960731	T	A	0.99	-0.03623	0.005808	4.40E-10
rs7308033	3	48766111	A	G	0.94	-0.02935	0.002668	3.70E-28
rs793202	3	53511648	G	A	0.47	0.008071	0.001308	6.90E-10
rs1192571	3	56448163	C	T	0.73	0.008877	0.001475	1.70E-09
rs7427326	3	57104606	G	A	0.71	-0.00796	0.001443	3.50E-08
rs7308777	3	58491954	C	T	0.72	0.008847	0.001455	1.20E-09
rs1271557	3	61583134	G	T	0.79	0.010502	0.001612	7.20E-11
rs1249511	3	66790228	C	T	0.41	-0.00733	0.00133	3.60E-08
rs7291450	3	67346396	G	T	0.9	0.018537	0.002161	9.60E-18
rs7867012	3	70907066	G	A	0.85	0.012387	0.001875	3.90E-11
rs6224530	3	72380265	G	C	0.84	0.014111	0.001795	3.80E-15
rs1307065	3	87305728	T	C	0.96	0.019492	0.003275	2.60E-09
rs2915293	3	87995951	G	A	0.31	-0.00837	0.001417	3.50E-09
rs7646497	3	98265810	G	A	0.59	-0.00748	0.001337	2.20E-08
rs6228178	3	99331665	C	T	0.87	0.01369	0.001989	5.90E-12
rs1516825	3	1.07E+08	C	T	0.41	0.008166	0.00133	8.20E-10
rs2700227	3	1.13E+08	G	A	0.66	-0.01064	0.001389	1.90E-14
rs4682132	3	1.13E+08	T	C	0.83	0.011718	0.001725	1.10E-11
rs6791545	3	1.14E+08	A	C	0.73	0.011233	0.001469	2.00E-14
rs6799530	3	1.18E+08	T	A	0.53	0.008349	0.001309	1.80E-10
rs1171455	3	1.23E+08	C	T	0.92	0.014771	0.002455	1.80E-09
rs3803	3	1.28E+08	G	A	0.8	-0.00907	0.00164	3.20E-08
rs7692971	3	1.29E+08	G	T	0.97	0.028858	0.003763	1.70E-14
rs7439739	3	1.34E+08	A	G	0.86	-0.01203	0.001885	1.80E-10
rs9879993	3	1.34E+08	A	T	0.56	0.007509	0.001317	1.20E-08
rs1143527	3	1.36E+08	C	G	0.96	0.020925	0.003542	3.50E-09
rs2883329	3	1.36E+08	A	G	0.95	0.017322	0.003115	2.70E-08
rs6439999	3	1.41E+08	G	A	0.52	-0.03327	0.001304	#####
rs9857975	3	1.46E+08	T	C	0.53	-0.00775	0.001308	3.10E-09
rs9878692	3	1.47E+08	C	A	0.57	0.008254	0.001335	6.40E-10
rs1167433	3	1.56E+08	C	T	0.96	0.023311	0.003412	8.40E-12
rs6227580	3	1.57E+08	G	A	0.93	-0.01485	0.002641	1.90E-08
rs6773061	3	1.57E+08	G	C	0.66	0.011729	0.00138	1.90E-17
rs1165628	3	1.58E+08	G	A	0.96	-0.02095	0.003379	5.60E-10
rs1685178	3	1.68E+08	T	C	0.6	0.007573	0.001352	2.10E-08
rs6805301	3	1.69E+08	C	T	0.69	-0.00797	0.00142	2.00E-08
rs7317432	3	1.69E+08	T	C	0.85	0.011429	0.001855	7.20E-10
rs3471696	3	1.72E+08	G	C	0.56	0.01313	0.001341	1.20E-22
rs9827093	3	1.72E+08	T	C	0.95	-0.01748	0.003077	1.40E-08
rs9861295	3	1.72E+08	T	C	0.77	0.011007	0.001597	5.50E-12
rs1746335	3	1.72E+08	A	G	0.95	0.016731	0.002924	1.10E-08
rs1099352	3	1.83E+08	G	A	0.56	-0.00741	0.001312	1.60E-08
rs3446597	3	1.85E+08	A	G	0.92	-0.01523	0.002534	1.90E-09
rs7631981	3	1.85E+08	G	A	0.7	0.010165	0.001428	1.10E-12
rs7634540	3	1.86E+08	T	A	0.92	0.015611	0.002465	2.40E-10
rs3496791	3	1.87E+08	G	A	0.93	-0.03187	0.002607	2.30E-34
rs1191767	3	1.88E+08	T	C	0.95	-0.01993	0.003086	1.10E-10

rs6803867	3	1.89E+08	G	T	0.76	-0.00967	0.001535	3.00E-10
rs9998	3	1.94E+08	G	A	0.61	0.008968	0.001354	3.50E-11
rs1166487	4	691067	G	A	0.96	0.018771	0.003264	8.90E-09
rs4647931	4	1018891	G	T	0.97	0.028609	0.004163	6.30E-12
rs7893184	4	1645586	G	A	0.98	0.033629	0.004594	2.50E-13
rs7692779	4	1743366	A	G	0.98	0.029337	0.004489	6.30E-11
rs1264119	4	1788775	C	T	0.81	-0.01026	0.001774	7.20E-09
rs1878321	4	2777687	G	A	0.98	-0.02707	0.004571	3.20E-09
rs1173037	4	5028892	G	T	0.97	0.03448	0.003803	1.20E-19
rs1736195	4	12608406	C	G	0.95	-0.01625	0.002925	2.80E-08
rs1463352	4	12705697	T	C	0.97	-0.03001	0.004158	5.30E-13
rs7646565	4	13036442	C	A	0.93	0.014661	0.002587	1.40E-08
rs7734492	4	13247829	G	A	0.77	0.010326	0.00156	3.60E-11
rs1223371	4	17570063	T	A	0.38	-0.01056	0.001343	3.70E-15
rs5620371	4	25342606	A	G	0.77	-0.01179	0.001573	6.60E-14
rs1512102	4	26016803	G	A	0.27	0.008087	0.001471	3.90E-08
rs7466915	4	38606933	C	T	0.85	0.014743	0.001813	4.20E-16
rs7598853	4	39175494	T	C	0.95	0.017455	0.002898	1.70E-09
rs1311798	4	39841080	T	C	0.98	0.024683	0.00452	4.80E-08
rs3602470	4	45113127	C	T	0.74	-0.00828	0.00148	2.20E-08
rs1310950	4	48823980	C	T	0.48	-0.01085	0.001303	8.10E-17
rs6554107	4	54296120	G	A	0.19	0.010755	0.001677	1.40E-10
rs1193585	4	56204865	C	A	0.81	-0.01095	0.001686	8.40E-11
rs5591531	4	57766323	A	G	0.94	-0.02281	0.002705	3.40E-17
rs1138437	4	73147931	A	C	0.95	0.018593	0.00304	9.60E-10
rs1502703	4	73178175	T	C	0.99	0.031132	0.005671	4.00E-08
rs1313240	4	73419531	T	C	0.94	0.016846	0.002813	2.10E-09
rs1075517	4	73638743	A	G	0.59	0.009058	0.001328	9.20E-12
rs1118973	4	81825149	A	G	0.98	-0.04039	0.004763	2.20E-17
rs5849856	4	82173248	G	A	0.75	-0.02912	0.001502	9.70E-84
rs7692359	4	83209346	T	C	0.79	0.009192	0.001584	6.50E-09
rs1312073	4	86701617	G	A	0.83	0.012492	0.00176	1.30E-12
rs4693145	4	87318012	C	T	0.81	-0.01042	0.001673	4.60E-10
rs1145653	4	88007789	C	T	0.98	0.029335	0.004745	6.30E-10
rs2869695	4	88666217	T	C	0.8	-0.01445	0.001632	8.40E-19
rs2851023	4	1E+08	C	T	0.33	0.00881	0.00139	2.30E-10
rs1251137	4	1.03E+08	C	T	0.89	0.01217	0.002153	1.60E-08
rs1002447	4	1.03E+08	A	G	0.59	-0.0073	0.001326	3.70E-08
rs1351623	4	1.05E+08	C	T	0.83	-0.00967	0.001753	3.50E-08
rs2859023	4	1.06E+08	C	T	0.8	-0.01194	0.001642	3.50E-13
rs1172146	4	1.09E+08	T	C	0.61	-0.00819	0.001336	8.90E-10
rs1313016	4	1.15E+08	A	G	0.77	0.010195	0.001561	6.60E-11
rs7668809	4	1.2E+08	A	G	0.04	-0.01813	0.003274	3.10E-08
rs1000486	4	1.21E+08	C	A	0.75	-0.00881	0.001503	4.60E-09
rs2847949	4	1.23E+08	C	T	0.83	0.009898	0.001789	3.20E-08
rs308447	4	1.24E+08	C	T	0.63	-0.00774	0.001356	1.20E-08
rs1399199	4	1.35E+08	G	A	0.97	-0.02329	0.004121	1.60E-08

rs6824182	4	1.4E+08	A	C	0.91	0.012472	0.002262	3.50E-08
rs2012599	4	1.44E+08	T	C	0.46	-0.00863	0.001314	5.20E-11
rs14069856	4	1.45E+08	T	G	0.85	-0.01143	0.00185	6.30E-10
rs13105210	4	1.45E+08	C	T	0.69	-0.01018	0.001419	7.50E-13
rs74730596	4	1.46E+08	G	A	0.98	-0.03178	0.005088	4.20E-10
rs75151874	4	1.58E+08	T	A	0.91	0.013079	0.002253	6.40E-09
rs34227791	4	1.6E+08	G	C	0.69	-0.00872	0.00141	6.20E-10
rs9993989	4	1.76E+08	A	G	0.2	0.009115	0.001649	3.30E-08
rs13972851	4	1.84E+08	C	T	0.96	0.018451	0.00331	2.50E-08
rs6830250	4	1.87E+08	C	T	0.4	-0.00825	0.001331	5.70E-10
rs10214258	5	154267	C	T	0.97	-0.01947	0.003566	4.80E-08
rs35768130	5	6704551	C	T	0.7	-0.01082	0.001425	3.10E-14
rs863879	5	14955891	T	G	0.3	-0.00835	0.001428	5.00E-09
rs72751574	5	31396766	G	C	0.81	-0.01071	0.001791	2.30E-09
rs62369471	5	32672263	G	A	0.68	0.016724	0.001448	7.60E-31
rs11398619	5	32787670	T	A	0.97	0.051957	0.003968	3.50E-39
rs17447163	5	32865944	G	A	0.97	-0.03453	0.004079	2.60E-17
rs13911373	5	33138561	G	T	0.98	-0.02934	0.004506	7.50E-11
rs14607779	5	33234675	G	A	0.98	0.027218	0.004865	2.20E-08
rs36669	5	36745667	T	C	0.21	-0.01123	0.001616	3.60E-12
rs72757003	5	42742377	A	T	0.94	0.017948	0.002855	3.20E-10
rs14668954	5	42822945	T	C	0.99	-0.03863	0.006109	2.60E-10
rs62372091	5	42919482	G	A	0.97	-0.02509	0.003981	2.90E-10
rs12055150	5	50418865	T	C	0.34	0.009102	0.001378	3.90E-11
rs6450136	5	52765331	C	A	0.31	0.008109	0.001415	1.00E-08
rs78240891	5	54334643	G	T	0.87	-0.01306	0.001979	4.20E-11
rs3111190	5	54377172	G	A	0.98	-0.02559	0.004591	2.50E-08
rs18713748	5	54583417	T	A	0.95	-0.01748	0.002949	3.10E-09
rs11746769	5	58574508	C	T	0.8	0.010281	0.001633	3.10E-10
rs266595	5	64345499	A	G	0.29	-0.01232	0.001444	1.50E-17
rs14073659	5	64762479	T	C	0.99	0.033229	0.005758	7.90E-09
rs35745488	5	67183807	C	G	0.93	0.018983	0.002672	1.20E-12
rs1819987	5	67567053	G	C	0.6	0.0081	0.001333	1.20E-09
rs2338212	5	71673211	C	G	0.89	-0.01172	0.002081	1.80E-08
rs4703747	5	77304962	C	G	0.78	0.01111	0.001583	2.20E-12
rs62377511	5	78131687	G	A	0.84	0.011532	0.001807	1.80E-10
rs6862798	5	78931459	C	T	0.91	-0.01234	0.002253	4.30E-08
rs442767	5	79951496	G	T	0.67	-0.00825	0.001384	2.50E-09
rs2624217	5	86445632	A	G	0.76	0.00972	0.001527	1.90E-10
rs10474291	5	88481215	G	A	0.68	0.011825	0.001396	2.40E-17
rs10213801	5	90249900	G	A	0.42	0.007377	0.001324	2.50E-08
rs7721254	5	1.02E+08	C	T	0.91	0.013391	0.002289	4.90E-09
rs288188	5	1.07E+08	T	C	0.83	-0.01005	0.001737	7.10E-09
rs77586651	5	1.08E+08	G	A	0.83	0.011044	0.001791	7.00E-10
rs2546115	5	1.12E+08	C	T	0.69	0.010205	0.00142	6.80E-13
rs256975	5	1.15E+08	C	T	0.88	-0.0112	0.001983	1.60E-08
rs466118	5	1.15E+08	A	C	0.65	0.008076	0.001371	3.80E-09

rs1735204:	5	1.21E+08	T	C	0.78	-0.00862	0.001575	4.40E-08
rs58039148	5	1.23E+08	C	A	0.72	-0.00976	0.001452	1.80E-11
rs3589767:	5	1.27E+08	C	T	0.65	-0.00798	0.001372	6.00E-09
rs7624472:	5	1.29E+08	T	G	0.93	-0.02282	0.002502	7.50E-20
rs12522464	5	1.3E+08	C	T	0.81	0.01415	0.001684	4.30E-17
rs74666984	5	1.31E+08	T	C	0.99	-0.04347	0.006269	4.10E-12
rs11405951	5	1.32E+08	C	T	0.97	0.027197	0.003669	1.20E-13
rs56308774	5	1.34E+08	C	G	0.88	0.017216	0.002066	7.80E-17
rs56308774	5	1.34E+08	C	T	1	0.071215	0.01243	1.00E-08
rs13154718	5	1.34E+08	C	T	0.98	-0.02506	0.004525	3.10E-08
rs778601	5	1.4E+08	T	G	0.71	0.008984	0.001437	4.00E-10
rs251022	5	1.41E+08	T	C	0.47	0.007227	0.001304	3.00E-08
rs12521013	5	1.42E+08	A	C	0.47	-0.00759	0.00131	7.00E-09
rs11738754	5	1.43E+08	A	T	0.54	0.00773	0.001309	3.50E-09
rs1693917	5	1.49E+08	A	G	0.49	-0.00875	0.001304	2.00E-11
rs74350494	5	1.57E+08	A	T	0.91	0.013547	0.002251	1.80E-09
rs66534318	5	1.58E+08	A	G	0.69	0.008986	0.001412	2.00E-10
rs6880702	5	1.59E+08	G	A	0.34	0.008825	0.001383	1.70E-10
rs55920908	5	1.68E+08	G	A	0.92	0.019772	0.002375	8.30E-17
rs11405183	5	1.7E+08	G	A	0.99	0.038344	0.006942	3.30E-08
rs6892295	5	1.71E+08	T	C	0.94	0.020682	0.002769	8.00E-14
rs11185031	5	1.71E+08	G	A	0.95	0.020603	0.003155	6.60E-11
rs11344958	5	1.72E+08	G	A	0.97	-0.02599	0.003664	1.30E-12
rs10780116	5	1.73E+08	C	T	0.53	-0.00962	0.001307	1.80E-13
rs7715674	5	1.73E+08	C	T	0.67	0.010372	0.001399	1.20E-13
rs11211639	5	1.77E+08	T	A	0.97	-0.02376	0.004247	2.20E-08
rs2569877	6	1615504	C	T	0.76	-0.00937	0.001529	8.80E-10
rs4959158	6	1835401	G	A	0.41	-0.00896	0.001357	4.10E-11
rs1317418	6	6760863	C	G	0.71	0.009485	0.001429	3.20E-11
rs9405981	6	6880762	T	C	0.28	-0.00866	0.001496	7.10E-09
rs2051089	6	7624572	T	C	0.67	0.007879	0.001395	1.60E-08
rs9406051	6	7693342	G	A	0.5	-0.02959	0.001309	#####
rs10498671	6	7797840	C	G	0.82	-0.0201	0.001701	3.30E-32
rs1853655	6	18524374	T	C	0.67	-0.0085	0.001384	8.20E-10
rs6926229	6	19828213	T	C	0.46	-0.00877	0.0013	1.60E-11
rs12665526	6	19900521	T	C	0.64	-0.00809	0.001354	2.40E-09
rs2328667	6	22104421	A	G	0.44	-0.00836	0.00131	1.80E-10
rs9460777	6	22721637	C	A	0.53	0.007206	0.0013	3.00E-08
rs62392334	6	25506415	A	G	0.75	0.012334	0.001493	1.50E-16
rs61747861	6	26272548	G	T	0.79	0.029706	0.001639	2.20E-73
rs436827	6	28557133	T	A	0.53	0.008117	0.001301	4.40E-10
rs9468618	6	29750776	C	T	0.91	0.012811	0.002266	1.60E-08
rs2844760	6	30237861	T	C	0.74	0.012749	0.00147	4.30E-18
rs11266551	6	31681905	C	T	0.98	-0.02623	0.004793	4.40E-08
rs41267082	6	31830593	A	C	0.97	0.026753	0.003726	7.00E-13
rs41270871	6	32628272	A	G	0.81	0.017165	0.001675	1.20E-24
rs4713742	6	34089594	C	T	0.47	0.007265	0.001297	2.10E-08

rs9658125	6	35371434	C	T	0.97	0.055828	0.003997	2.50E-44
rs13192954	6	35633456	A	G	0.95	0.027341	0.003064	4.50E-19
rs11405623	6	41877671	G	A	0.99	0.069676	0.005837	7.70E-33
rs2273918	6	43013662	T	C	0.93	0.013875	0.002493	2.60E-08
rs736259	6	44508405	A	G	0.85	0.010445	0.001839	1.30E-08
rs3799973	6	44823727	G	A	0.53	0.008558	0.001298	4.40E-11
rs7744700	6	53349401	T	A	0.71	0.009019	0.001461	6.70E-10
rs6906456	6	67458268	T	C	0.72	0.008382	0.001447	7.00E-09
rs852964	6	72123629	A	G	0.58	-0.00732	0.001316	2.60E-08
rs13198421	6	75932139	G	T	0.77	-0.00878	0.001554	1.60E-08
rs9359123	6	76164729	G	T	0.86	0.016605	0.00185	2.80E-19
rs9448727	6	80175016	G	A	0.84	-0.01088	0.001787	1.10E-09
rs9341802	6	80731675	A	G	0.65	0.012365	0.001354	6.80E-20
rs2503756	6	81360693	C	T	0.39	-0.01542	0.001326	2.80E-31
rs6911841	6	82417140	G	A	0.94	-0.01536	0.002653	7.10E-09
rs593508	6	1E+08	G	C	0.72	-0.00814	0.001453	2.10E-08
rs13198979	6	1.05E+08	T	C	0.81	0.010476	0.001693	6.20E-10
rs79732163	6	1.05E+08	A	G	0.98	-0.02885	0.004929	4.80E-09
rs217520	6	1.08E+08	C	A	0.42	0.007304	0.001313	2.60E-08
rs1009404	6	1.14E+08	T	C	0.23	0.008393	0.001536	4.60E-08
rs11153586	6	1.16E+08	A	G	0.67	-0.00756	0.001379	4.20E-08
rs4946167	6	1.17E+08	C	G	0.71	0.008236	0.001433	9.10E-09
rs11153672	6	1.18E+08	T	C	0.4	0.010136	0.001336	3.30E-14
rs9385385	6	1.26E+08	C	T	0.55	-0.01142	0.001312	3.20E-18
rs2179748	6	1.26E+08	G	A	0.36	-0.00966	0.001353	9.30E-13
rs14065749	6	1.27E+08	T	C	0.97	0.02226	0.00397	2.10E-08
rs9321170	6	1.3E+08	G	A	0.27	-0.0145	0.001457	2.50E-23
rs6569646	6	1.3E+08	T	C	0.3	0.025754	0.001419	1.30E-73
rs79253164	6	1.31E+08	G	A	0.95	-0.0219	0.003064	8.70E-13
rs7772637	6	1.33E+08	G	A	0.73	-0.00809	0.001461	3.10E-08
rs507449	6	1.34E+08	G	C	0.81	-0.00999	0.001661	1.80E-09
rs6933318	6	1.4E+08	A	G	0.76	0.011648	0.001518	1.70E-14
rs9496306	6	1.43E+08	C	T	0.64	0.020651	0.001361	5.70E-52
rs11771753	6	1.43E+08	G	A	0.95	0.018711	0.00297	3.00E-10
rs9479025	6	1.52E+08	A	T	0.48	0.008742	0.001326	4.40E-11
rs655890	6	1.52E+08	G	A	0.57	0.010926	0.001318	1.20E-16
rs618173	6	1.53E+08	T	C	0.5	-0.00747	0.001295	8.10E-09
rs170843	6	1.56E+08	T	C	0.33	-0.01083	0.001384	4.90E-15
rs12215489	6	1.57E+08	A	G	0.87	-0.01045	0.001914	4.80E-08
rs7753292	6	1.59E+08	T	C	0.61	-0.00806	0.001329	1.30E-09
rs316172	6	1.61E+08	G	C	0.69	-0.00882	0.001409	3.80E-10
rs1475160	6	1.64E+08	A	G	0.34	-0.00842	0.001381	1.10E-09
rs991946	6	1.66E+08	C	T	0.52	0.012894	0.001298	3.00E-23
rs9459603	6	1.67E+08	G	A	0.56	0.009029	0.001307	4.80E-12
rs61071618	6	1.69E+08	A	G	0.79	0.009648	0.001618	2.50E-09
rs751171	6	1.69E+08	T	C	0.67	0.012512	0.001384	1.50E-19
rs10282184	7	582249	T	C	0.64	-0.00767	0.001384	3.00E-08

rs2164079	7	1557646	T	C	0.43	0.009301	0.001321	1.90E-12
rs1170974	7	1948292	G	A	0.91	-0.01378	0.002325	3.10E-09
rs6243953	7	2737762	C	G	0.91	-0.01323	0.00232	1.20E-08
rs1022993	7	2750129	C	T	0.84	-0.01262	0.001792	1.80E-12
rs3525870	7	5364645	G	C	0.85	0.013717	0.001859	1.60E-13
rs7305739	7	6504240	T	C	0.57	-0.00736	0.001325	2.80E-08
rs1050290	7	15726066	G	A	0.37	0.008284	0.001359	1.10E-09
rs2537604	7	17729429	C	T	0.63	0.007924	0.001356	5.00E-09
rs2269749	7	18665393	C	A	0.88	0.012664	0.002009	2.90E-10
rs2073963	7	18877874	T	G	0.61	0.008264	0.001342	7.40E-10
rs2526626	7	19041337	G	A	0.75	-0.00964	0.001509	1.60E-10
rs2240046	7	20371273	C	G	0.94	-0.01801	0.002778	9.00E-11
rs7817530	7	23629053	A	G	0.93	0.014471	0.002511	8.20E-09
rs2711117	7	24590069	T	A	0.78	-0.00892	0.001573	1.40E-08
rs5580317	7	25667554	T	A	0.9	0.015408	0.002226	4.50E-12
rs7307537	7	27882550	A	G	0.89	0.013335	0.002051	7.90E-11
rs1015614	7	28128751	C	T	0.23	0.018432	0.001599	9.60E-31
rs41349	7	28727156	G	A	0.63	0.008786	0.001379	1.90E-10
rs1766984	7	28852462	T	C	0.71	-0.01125	0.001445	6.80E-15
rs1253690	7	33213009	C	A	0.99	-0.03374	0.005609	1.80E-09
rs3575535	7	37942857	G	C	0.81	-0.01145	0.001677	8.60E-12
rs1668355	7	38005438	C	T	0.18	0.009844	0.001707	8.00E-09
rs1717746	7	38095734	G	A	0.12	-0.01793	0.00199	2.10E-19
rs2837806	7	42229078	G	C	0.79	-0.00926	0.001601	7.30E-09
rs1195	7	45099450	C	T	0.84	-0.00981	0.001796	4.70E-08
rs6245101	7	46172079	A	G	0.69	-0.00993	0.001435	4.50E-12
rs1464840	7	46801941	T	A	0.75	0.009902	0.001528	9.20E-11
rs2715093	7	50733034	T	C	0.49	0.009846	0.001312	6.20E-14
rs816409	7	56173435	A	G	0.48	0.008182	0.001305	3.60E-10
rs3477154	7	64514915	A	G	0.83	-0.0101	0.001763	1.00E-08
rs7815954	7	67662295	C	A	0.81	-0.01028	0.00166	5.90E-10
rs210591	7	69247003	C	T	0.65	0.007455	0.001367	4.90E-08
rs5574770	7	73037366	G	A	0.8	-0.00935	0.001627	9.10E-09
rs1253537	7	73475775	G	A	0.84	-0.01005	0.001829	3.90E-08
rs1024731	7	84545533	T	C	0.65	0.007861	0.001374	1.10E-08
rs2838192	7	87174390	G	A	0.94	-0.01687	0.002747	8.10E-10
rs1439861	7	91291311	A	G	0.98	0.02823	0.005081	2.80E-08
rs1773253	7	91479659	T	G	0.93	-0.01773	0.002591	7.70E-12
rs7757261	7	92058135	C	G	0.91	-0.01327	0.00231	9.20E-09
rs2528544	7	93270791	G	T	0.59	-0.00858	0.001327	1.00E-10
rs1489823	7	99075038	T	C	0.96	-0.03196	0.003328	7.60E-22
rs1024884	7	1.02E+08	G	A	0.94	0.016273	0.002733	2.60E-09
rs1253200	7	1.14E+08	A	G	0.68	-0.00842	0.001399	1.80E-09
rs1176632	7	1.21E+08	C	T	0.63	0.0095	0.001352	2.10E-12
rs1095395	7	1.22E+08	G	A	0.62	-0.0106	0.001352	4.50E-15
rs205723	7	1.31E+08	G	A	0.59	-0.00771	0.001326	6.10E-09
rs1716784	7	1.34E+08	C	G	0.85	-0.01108	0.001834	1.50E-09

rs6973845	7	1.34E+08	A	G	0.81	0.009088	0.001665	4.80E-08
rs273972	7	1.38E+08	A	G	0.39	-0.01063	0.001354	4.20E-15
rs2010742	7	1.4E+08	C	T	0.76	-0.00876	0.001543	1.40E-08
rs6164073	7	1.41E+08	T	C	0.83	-0.00962	0.001747	3.70E-08
rs122571	7	1.48E+08	A	G	0.56	0.00878	0.001334	4.60E-11
rs7584812	7	1.49E+08	G	A	0.83	-0.03109	0.001737	1.30E-71
rs1234354	7	1.5E+08	T	C	0.66	0.007523	0.001379	4.90E-08
rs1805123	7	1.51E+08	T	G	0.75	0.009762	0.001516	1.20E-10
rs10086880	8	4770129	G	C	0.73	-0.00819	0.001484	3.50E-08
rs2527166	8	5532881	C	T	0.2	0.009353	0.001643	1.20E-08
rs2980508	8	8171732	G	A	0.51	0.007376	0.001313	1.90E-08
rs7836264	8	13149874	C	T	0.62	0.00824	0.001354	1.10E-09
rs76364830	8	13372120	G	A	0.94	0.031001	0.002709	2.50E-30
rs58551730	8	19316627	T	A	0.62	-0.00744	0.001353	3.90E-08
rs3779893	8	23163067	G	C	0.27	0.009895	0.001487	2.80E-11
rs73224491	8	23219718	C	T	0.74	0.008388	0.001495	2.00E-08
rs17089329	8	23390046	C	G	0.8	-0.01704	0.001642	3.30E-25
rs13254494	8	23414743	C	T	0.42	0.009891	0.001327	9.10E-14
rs71512631	8	32357294	G	A	0.94	0.01583	0.00287	3.50E-08
rs7002359	8	37334289	T	C	0.19	-0.00956	0.001663	8.90E-09
rs9198	8	38120721	T	C	0.75	0.008506	0.001516	2.00E-08
rs72643819	8	41167193	G	T	0.61	0.007494	0.001346	2.60E-08
rs14984731	8	49046488	C	A	0.93	-0.01969	0.00268	2.00E-13
rs14127790	8	56654581	C	T	0.98	-0.02814	0.004774	3.80E-09
rs11716881	8	56712834	G	A	0.97	0.023085	0.003716	5.20E-10
rs14403546	8	56714971	A	G	0.99	0.035016	0.005854	2.20E-09
rs1128143	8	57076379	C	A	0.99	0.048661	0.00682	9.70E-13
rs78558124	8	57310609	A	G	0.98	-0.03277	0.005028	7.20E-11
rs18704844	8	57320122	G	A	0.99	0.046921	0.006517	6.00E-13
rs1104292	8	57547121	T	C	0.03	-0.02355	0.004142	1.30E-08
rs14976380	8	67463878	G	T	0.99	0.039747	0.005741	4.40E-12
rs994177	8	70098682	T	C	0.22	0.008714	0.001594	4.60E-08
rs7839862	8	75150545	T	G	0.25	0.008315	0.001521	4.60E-08
rs4735777	8	75852089	T	C	0.9	-0.01454	0.00226	1.20E-10
rs17373728	8	76225516	T	C	0.79	0.011077	0.001605	5.10E-12
rs1560846	8	77529466	A	C	0.82	0.010159	0.001725	3.80E-09
rs1872138	8	77781087	A	G	0.35	0.008189	0.001374	2.50E-09
rs7016767	8	78236020	A	G	0.44	0.014941	0.001319	1.00E-29
rs78435601	8	87501984	G	A	0.76	0.008373	0.001524	4.00E-08
rs7009178	8	92129043	G	A	0.28	-0.00837	0.001456	9.10E-09
rs6997004	8	96418497	A	G	0.84	0.011678	0.001786	6.20E-11
rs1050969	8	1.04E+08	T	C	0.98	-0.03116	0.005152	1.50E-09
rs1443930	8	1.09E+08	T	G	0.34	-0.00804	0.001431	2.00E-08
rs12543458	8	1.16E+08	A	G	0.54	-0.00791	0.001329	2.60E-09
rs10955780	8	1.17E+08	G	A	0.62	0.009817	0.001354	4.20E-13
rs1156545	8	1.2E+08	G	A	0.54	0.007448	0.001326	1.90E-08
rs17793091	8	1.2E+08	A	G	0.89	0.021488	0.002097	1.20E-24

rs10110786	8	1.21E+08	A	C	0.84	-0.01194	0.001793	2.70E-11
rs4870942	8	1.26E+08	C	T	0.73	0.016062	0.001502	1.10E-26
rs11774172	8	1.29E+08	A	G	0.71	-0.00908	0.001451	3.90E-10
rs7011623	8	1.31E+08	T	A	0.58	0.011081	0.001331	8.70E-17
rs837231	8	1.31E+08	C	T	0.58	0.007332	0.001336	4.10E-08
rs2978041	8	1.35E+08	A	C	0.74	-0.00878	0.001496	4.30E-09
rs3934605	8	1.35E+08	G	A	0.58	0.009162	0.001329	5.50E-12
rs2944770	8	1.42E+08	T	C	0.47	-0.00842	0.001312	1.40E-10
rs11781520	8	1.42E+08	C	G	0.69	0.007784	0.001423	4.50E-08
rs3750211	8	1.44E+08	C	T	0.17	0.014833	0.001751	2.40E-17
rs72693380	8	1.45E+08	G	C	0.77	0.010014	0.0016	3.90E-10
rs2088003	9	554834	C	T	0.77	0.008633	0.00155	2.60E-08
rs10974438	9	4291928	A	C	0.65	-0.00794	0.00137	6.80E-09
rs1410019	9	13861802	G	A	0.65	-0.00751	0.001371	4.30E-08
rs11795150	9	16105961	T	G	0.57	-0.00746	0.001319	1.60E-08
rs2209867	9	16402878	A	G	0.72	-0.00861	0.001478	5.70E-09
rs12378102	9	16996457	T	G	0.68	0.009185	0.001403	5.80E-11
rs16936911	9	18631832	C	G	0.78	0.008852	0.001601	3.20E-08
rs11777062	9	33602231	G	A	0.95	-0.01862	0.002974	3.80E-10
rs11575580	9	34660864	C	T	0.98	0.031824	0.004516	1.80E-12
rs61758519	9	35791137	C	G	0.99	0.0406	0.005975	1.10E-11
rs11143758	9	76629080	C	T	0.41	0.007617	0.00133	1.00E-08
rs3814115	9	78504729	T	C	0.68	-0.01549	0.0014	1.90E-28
rs73650459	9	78747786	G	A	0.76	-0.00926	0.001569	3.60E-09
rs74464669	9	83241407	G	C	0.9	-0.01234	0.002207	2.20E-08
rs2788099	9	84843011	C	T	0.67	-0.00776	0.001393	2.50E-08
rs1582396	9	86336239	A	G	0.39	0.01021	0.001358	5.60E-14
rs7874500	9	88911408	C	G	0.54	0.00842	0.001315	1.50E-10
rs653030	9	89102306	G	T	0.29	-0.01076	0.001452	1.20E-13
rs10868682	9	90642899	G	A	0.64	0.009614	0.001368	2.10E-12
rs10761129	9	94486321	C	T	0.33	0.01374	0.001391	5.20E-23
rs12378033	9	95499928	C	T	0.95	0.016445	0.002908	1.60E-08
rs10761256	9	96446695	C	G	0.72	0.011554	0.001457	2.20E-15
rs11736023	9	97326514	C	T	0.95	0.028665	0.003138	6.50E-20
rs12348781	9	98518886	G	A	0.97	-0.02627	0.003604	3.10E-13
rs59544701	9	1.02E+08	T	C	0.86	0.01222	0.001875	7.10E-11
rs77848688	9	1.09E+08	C	T	0.93	0.015505	0.00267	6.40E-09
rs7861738	9	1.1E+08	C	T	0.95	0.02083	0.003025	5.70E-12
rs78509281	9	1.1E+08	C	T	0.95	-0.02428	0.003016	8.30E-16
rs2275496	9	1.12E+08	C	T	0.54	0.007367	0.001314	2.10E-08
rs72757068	9	1.13E+08	T	C	0.85	0.012259	0.001822	1.70E-11
rs35533909	9	1.16E+08	A	C	0.89	0.016784	0.002143	4.80E-15
rs2808799	9	1.17E+08	C	G	0.63	-0.00783	0.001364	9.40E-09
rs1330350	9	1.18E+08	A	T	0.42	-0.00942	0.001327	1.20E-12
rs7465849	9	1.19E+08	A	G	0.62	0.009899	0.00135	2.20E-13
rs1975468	9	1.23E+08	C	A	0.16	0.012703	0.001774	8.10E-13
rs10986730	9	1.28E+08	C	T	0.57	0.007519	0.001319	1.20E-08

rs7522678	9	1.3E+08	C	A	0.95	0.017188	0.003106	3.10E-08
rs1124372	9	1.33E+08	G	C	0.85	0.01157	0.001813	1.70E-10
rs7032197	9	1.37E+08	A	T	0.35	0.009086	0.001462	5.20E-10
rs3588437	9	1.37E+08	A	T	0.25	-0.00849	0.001519	2.30E-08
rs2274116	9	1.39E+08	C	T	0.66	0.018403	0.001386	3.10E-40
rs1114591	9	1.39E+08	C	T	0.65	-0.01076	0.001374	4.90E-15
rs7896371	10	1729026	C	T	0.54	-0.00817	0.001322	6.50E-10
rs1125275	10	4845594	A	G	0.9	0.013614	0.002212	7.50E-10
rs7900864	10	5659548	G	A	0.1	0.012996	0.002244	7.00E-09
rs1235675	10	7450221	G	A	0.24	-0.00889	0.001538	7.60E-09
rs7073056	10	11877269	G	T	0.84	0.010365	0.001793	7.40E-09
rs2399915	10	12936781	G	T	0.54	-0.01344	0.001325	3.60E-24
rs1277511	10	22518518	G	A	0.92	-0.01392	0.002379	4.90E-09
rs4427471	10	23734114	G	T	0.73	-0.00964	0.001471	5.70E-11
rs7794868	10	24885419	C	T	0.88	0.010975	0.00198	3.00E-08
rs1277135	10	27873733	A	G	0.78	-0.01247	0.001583	3.30E-15
rs7082075	10	31082591	A	G	0.45	0.008466	0.001322	1.50E-10
rs662090	10	34496551	T	A	0.44	-0.00736	0.001324	2.70E-08
rs7478426	10	44112214	C	T	0.93	-0.01432	0.002579	2.80E-08
rs1120426	10	48552551	C	T	0.97	0.023137	0.004051	1.10E-08
rs1159872	10	50537013	T	C	0.55	0.007564	0.001315	8.80E-09
rs1916568	10	52120414	G	C	0.77	0.009676	0.001562	5.80E-10
rs1099515	10	52723732	T	A	0.83	0.009646	0.001758	4.10E-08
rs1159917	10	61394137	G	A	0.76	0.011569	0.001536	5.00E-14
rs1082162	10	61744247	A	G	0.76	-0.0104	0.001538	1.30E-11
rs1082174	10	62152721	A	G	0.56	-0.00793	0.001319	1.90E-09
rs7908445	10	63723336	T	C	0.42	0.01023	0.001326	1.20E-14
rs1174262	10	64850013	G	T	0.81	-0.01042	0.001677	5.10E-10
rs1181655	10	69961989	G	A	0.81	0.014963	0.001678	4.80E-19
rs1076249	10	73732665	T	C	0.41	0.008408	0.001338	3.30E-10
rs1993005	10	76817937	C	T	0.75	-0.00822	0.001507	4.80E-08
rs2395463	10	79039311	C	G	0.36	0.00783	0.001365	9.70E-09
rs5604467	10	79557402	G	A	0.91	-0.01422	0.002288	5.10E-10
rs6480922	10	80913782	T	C	0.2	0.016205	0.001635	3.70E-23
rs1076286	10	81137196	A	G	0.31	0.015614	0.001427	7.40E-28
rs1088775	10	89597650	T	A	0.22	0.009863	0.001611	9.30E-10
rs2459117	10	89767584	G	A	0.98	0.027358	0.004453	8.10E-10
rs792234	10	90151021	A	G	0.36	-0.00768	0.001371	2.20E-08
rs1118650	10	92982908	G	A	0.72	-0.01558	0.001456	1.00E-26
rs1867073	10	99793012	G	A	0.7	-0.00931	0.001433	8.30E-11
rs4589215	10	1.02E+08	A	G	0.6	0.007508	0.001337	2.00E-08
rs6584383	10	1.02E+08	C	G	0.78	0.009196	0.001582	6.10E-09
rs1814101	10	1.03E+08	T	C	0.18	-0.01145	0.001718	2.70E-11
rs7915985	10	1.04E+08	C	G	0.9	-0.01497	0.00223	1.90E-11
rs4387287	10	1.06E+08	A	C	0.16	0.010455	0.001764	3.10E-09
rs2782982	10	1.16E+08	A	G	0.52	-0.00805	0.001312	8.50E-10
rs5967890	10	1.2E+08	G	A	0.65	0.008327	0.001373	1.30E-09

rs1088628:	10	1.2E+08	G	A	0.67	-0.00888	0.001393	1.80E-10
rs7086828	10	1.21E+08	G	T	0.82	-0.01052	0.001723	1.00E-09
rs1119888:	10	1.21E+08	G	A	0.9	-0.02064	0.002224	1.70E-20
rs4962647	10	1.26E+08	T	C	0.34	0.010075	0.001394	5.00E-13
rs7460734:	10	1.27E+08	G	A	0.86	-0.01104	0.001933	1.10E-08
rs3858300	10	1.31E+08	A	C	0.38	-0.01017	0.001348	4.60E-14
rs3802984	11	197337	G	A	0.77	0.008576	0.001551	3.20E-08
rs6186877:	11	1891319	C	T	0.78	-0.01013	0.00159	1.80E-10
rs6186702:	11	2050120	G	C	0.83	-0.01004	0.001821	3.60E-08
rs3213223	11	2156930	G	A	0.77	0.008847	0.001557	1.30E-08
rs2237884	11	2799679	T	C	0.74	-0.01798	0.001492	1.90E-33
rs7858797:	11	11794359	G	A	0.84	0.01085	0.001773	9.50E-10
rs1076598:	11	12731218	C	T	0.59	-0.01464	0.001335	5.90E-28
rs1228860:	11	13230507	C	T	0.74	-0.01213	0.001499	6.00E-16
rs7440477:	11	14151532	C	T	0.93	-0.01816	0.002595	2.60E-12
rs1395652:	11	14224644	A	G	0.98	-0.02561	0.004365	4.40E-09
rs1083294:	11	18628730	G	A	0.58	0.008748	0.001326	4.20E-11
rs1375973	11	26804398	G	A	0.55	0.00748	0.001321	1.50E-08
rs4133156	11	28927943	A	G	0.44	-0.00718	0.001316	4.80E-08
rs1103100:	11	30215261	T	A	0.87	-0.01372	0.001938	1.40E-12
rs597053	11	30441946	T	C	0.7	-0.01201	0.001427	3.80E-17
rs4755814	11	44366518	T	C	0.42	0.007313	0.00133	3.90E-08
rs7943729	11	45183379	C	T	0.88	-0.01173	0.002018	6.20E-09
rs1113031:	11	45948498	G	C	0.98	-0.02429	0.004441	4.50E-08
rs1485107:	11	46104663	C	T	0.98	-0.02833	0.005087	2.60E-08
rs923531	11	46198013	A	G	0.04	-0.02278	0.003426	3.00E-11
rs7904322:	11	46385672	G	A	0.97	-0.02241	0.003777	3.00E-09
rs1169169:	11	48269422	G	T	0.99	-0.03471	0.006319	4.00E-08
rs7972197:	11	56231833	A	T	0.97	0.022813	0.003696	6.70E-10
rs2866833	11	57784307	A	G	0.72	0.008319	0.001462	1.30E-08
rs7118051	11	59296723	A	C	0.95	0.01706	0.002984	1.10E-08
rs1877450	11	64991754	G	A	0.14	-0.01075	0.001878	1.00E-08
rs1466626:	11	66198955	G	A	0.98	-0.02822	0.00447	2.70E-10
rs3512174:	11	67175349	G	A	0.95	-0.02049	0.002887	1.30E-12
rs6797671:	11	68023742	G	C	0.76	0.011725	0.001544	3.20E-14
rs1352075	11	69457293	C	T	0.53	0.007245	0.001314	3.50E-08
rs7112673	11	69846881	T	G	0.46	-0.00777	0.001316	3.40E-09
rs7875709:	11	75059358	C	T	0.94	-0.02693	0.002862	5.10E-21
rs1745069:	11	76134923	C	T	0.68	-0.00768	0.001406	4.70E-08
rs3586108:	11	77239035	C	T	0.71	-0.00915	0.001443	2.30E-10
rs522604	11	85299165	T	C	0.66	0.009482	0.00138	6.50E-12
rs1083027:	11	89216425	T	A	0.2	-0.0096	0.001639	4.70E-09
rs1102124:	11	95349566	T	A	0.76	-0.00855	0.001534	2.50E-08
rs608995	11	1.01E+08	A	T	0.76	0.00846	0.001527	3.00E-08
rs2513097	11	1.17E+08	A	G	0.76	0.008405	0.001536	4.40E-08
rs1504033:	11	1.18E+08	G	A	0.99	-0.03336	0.005713	5.20E-09
rs1384881:	11	1.2E+08	C	A	0.96	0.020807	0.003468	2.00E-09

rs4505077	11	1.23E+08	C	T	0.5	-0.01225	0.001318	1.50E-20
rs503764	11	1.26E+08	C	T	0.64	0.008153	0.001386	4.10E-09
rs6189882	11	1.26E+08	G	A	0.71	-0.00893	0.00144	5.70E-10
rs7127911	11	1.28E+08	G	T	0.73	-0.0094	0.001485	2.50E-10
rs2300126	12	315391	A	G	0.52	0.007324	0.001312	2.40E-08
rs515639	12	351323	C	T	0.87	-0.01408	0.001961	7.10E-13
rs7144749	12	630808	G	A	0.86	-0.01136	0.00191	2.70E-09
rs1493630	12	670520	C	T	0.97	-0.02266	0.004074	2.70E-08
rs7779795	12	680676	A	G	0.92	-0.01342	0.002428	3.20E-08
rs7969950	12	3408951	G	C	0.85	-0.01064	0.001816	4.70E-09
rs7980119	12	11834683	T	C	0.91	-0.01259	0.002286	3.70E-08
rs9804739	12	12815752	C	G	0.13	-0.01644	0.001966	6.20E-17
rs2066827	12	12871099	T	G	0.77	0.014599	0.00154	2.50E-21
rs1231258	12	15371606	A	G	0.68	0.008099	0.001393	6.10E-09
rs1104519	12	20527912	T	C	0.47	-0.00993	0.001317	4.80E-14
rs1104534	12	20783100	C	T	0.73	0.008423	0.001487	1.50E-08
rs6487360	12	23974620	A	G	0.56	-0.00732	0.001319	2.80E-08
rs1084226	12	24203778	C	A	0.64	-0.00941	0.001399	1.70E-11
rs1182988	12	27994433	G	A	0.94	0.015773	0.002832	2.60E-08
rs1399584	12	28314144	C	G	0.97	0.032651	0.003994	3.00E-16
rs7145371	12	29026391	T	G	0.84	0.010962	0.001805	1.30E-09
rs1008295	12	29504556	A	G	0.71	-0.01502	0.001446	2.80E-25
rs7964039	12	39736740	C	T	0.93	-0.01441	0.002585	2.50E-08
rs1175138	12	46114288	C	T	0.95	-0.01792	0.003126	9.90E-09
rs2241960	12	46580618	A	G	0.73	-0.00832	0.001461	1.30E-08
rs2045556	12	46673433	A	G	0.32	-0.01446	0.0014	5.40E-25
rs2732482	12	48762231	T	C	0.26	-0.00851	0.001484	9.80E-09
rs1979702	12	50462647	T	C	0.43	0.010117	0.001315	1.40E-14
rs1281623	12	53369540	G	A	0.95	-0.01728	0.002995	7.90E-09
rs7750845	12	56428244	G	A	0.94	-0.0208	0.002723	2.20E-14
rs2277339	12	57146069	T	G	0.9	0.017998	0.002135	3.40E-17
rs1755652	12	59680013	C	T	0.83	0.009406	0.001719	4.40E-08
rs516590	12	65100884	C	T	0.41	0.008344	0.001338	4.40E-10
rs1893490	12	66048333	G	C	0.99	0.046013	0.00774	2.80E-09
rs1914216	12	66164525	C	T	0.98	0.034695	0.005262	4.30E-11
rs1913729	12	66328598	A	G	0.99	0.04539	0.006719	1.40E-11
rs7409784	12	66361242	C	T	0.97	0.028945	0.003661	2.70E-15
rs1161571	12	69619736	A	T	0.55	-0.01098	0.001313	6.10E-17
rs1903511	12	77404016	G	A	0.97	0.02286	0.004091	2.30E-08
rs771648	12	77547182	T	C	0.43	0.00972	0.00132	1.80E-13
rs1746567	12	89997478	T	C	0.96	0.018937	0.003356	1.70E-08
rs1049223	12	91469477	C	T	0.88	-0.01461	0.002017	4.40E-13
rs7734165	12	93705840	G	A	0.96	0.019743	0.003507	1.80E-08
rs7321870	12	93848923	C	T	0.79	-0.00995	0.001592	4.10E-10
rs1170397	12	93918863	G	C	0.97	-0.0278	0.004004	3.80E-12
rs7952245	12	94299561	G	A	0.96	0.025443	0.003364	3.90E-14
rs1236856	12	1.02E+08	T	G	0.64	0.013981	0.001474	2.40E-21

rs1180122	12	1.03E+08	A	G	0.96	-0.01868	0.003384	3.40E-08
rs1175145	12	1.04E+08	T	C	0.98	-0.03671	0.005392	9.90E-12
rs6194195	12	1.07E+08	C	A	0.91	0.013606	0.002303	3.50E-09
rs4964509	12	1.07E+08	C	T	0.54	0.008752	0.001311	2.50E-11
rs2551842	12	1.16E+08	A	G	0.83	0.010462	0.001772	3.60E-09
rs6193693	12	1.16E+08	A	C	0.84	0.011683	0.001772	4.40E-11
rs7314377	12	1.17E+08	G	T	0.11	-0.01248	0.002131	4.80E-09
rs1183791	12	1.17E+08	C	G	0.92	0.0168	0.002425	4.30E-12
rs1106501	12	1.21E+08	C	T	0.97	0.034546	0.004083	2.70E-17
rs1450019	12	1.22E+08	T	G	0.98	0.027244	0.00497	4.20E-08
rs2862990	12	1.22E+08	T	C	0.44	0.011801	0.001318	3.40E-19
rs1106011	12	1.23E+08	A	C	0.73	0.008159	0.00148	3.50E-08
rs6598198	12	1.33E+08	A	T	0.81	-0.01145	0.001665	6.20E-12
rs7866371	12	1.33E+08	G	A	0.97	-0.02289	0.004034	1.40E-08
rs9579887	13	21122432	A	G	0.92	0.013349	0.002424	3.60E-08
rs7750925	13	27959981	G	A	0.85	-0.01004	0.00184	4.90E-08
rs7991883	13	30157458	A	G	0.9	-0.01383	0.002212	4.00E-10
rs1207944	13	33019845	G	T	0.56	0.009318	0.001327	2.20E-12
rs3498301	13	33826126	A	T	0.77	-0.00956	0.001566	1.00E-09
rs750899	13	40154145	T	C	0.15	0.010159	0.001823	2.50E-08
rs2875409	13	41112849	G	A	0.95	0.022407	0.00303	1.40E-13
rs4128415	13	46594619	T	C	0.98	0.03092	0.005604	3.40E-08
rs9567702	13	47132052	A	G	0.57	-0.00778	0.001325	4.40E-09
rs9534584	13	47869524	G	A	0.68	-0.00846	0.001411	2.00E-09
rs9568014	13	48711793	C	T	0.78	-0.00907	0.001587	1.10E-08
rs1210024	13	50438748	G	A	0.74	0.010367	0.001507	5.90E-12
rs2740528	13	50871832	C	A	0.68	-0.01278	0.001413	1.50E-19
rs803804	13	71599302	C	T	0.36	-0.00808	0.001388	5.90E-09
rs2196979	13	73343039	C	T	0.29	0.009226	0.001451	2.00E-10
rs6196625	13	73649410	C	T	0.9	0.012725	0.002266	1.90E-08
rs9574547	13	80631417	C	A	0.79	-0.01134	0.001628	3.30E-12
rs9319140	13	85897215	T	A	0.63	-0.00768	0.001385	3.00E-08
rs9515884	13	91779999	A	T	0.83	0.009795	0.001774	3.40E-08
rs6197032	13	91976589	C	T	0.93	-0.01494	0.002549	4.60E-09
rs1717474	13	94574965	T	C	0.69	0.00775	0.00142	4.80E-08
rs9557049	13	99418714	C	A	0.72	-0.00905	0.00147	7.60E-10
rs502117	13	1.02E+08	C	G	0.59	-0.00743	0.001335	2.70E-08
rs3024735	13	1.14E+08	G	A	0.8	-0.00975	0.001656	3.90E-09
rs3444667	13	1.15E+08	C	T	0.93	-0.0141	0.00252	2.20E-08
rs7424222	13	1.15E+08	C	A	0.91	0.012858	0.002338	3.80E-08
rs8019890	14	21538067	C	A	0.47	-0.01601	0.001335	3.90E-33
rs2319817	14	21801136	G	A	0.88	-0.02053	0.002098	1.30E-22
rs3568130	14	23679432	A	G	0.84	-0.01008	0.00181	2.60E-08
rs2145566	14	23921910	C	T	0.23	-0.01056	0.001553	1.10E-11
rs743271	14	24548567	G	A	0.32	-0.00989	0.001435	5.50E-12
rs1243668	14	35213280	C	G	0.88	-0.01144	0.002023	1.50E-08
rs1386798	14	36126651	C	T	0.88	-0.01457	0.002053	1.30E-12

rs4548774	14	36984399	T	C	0.6	0.008432	0.001351	4.30E-10
rs1958644	14	54321284	G	A	0.33	-0.00791	0.001401	1.60E-08
rs811153	14	54619316	C	T	0.19	-0.00921	0.001674	3.80E-08
rs1288607	14	55191220	C	T	0.4	0.008058	0.001405	9.70E-09
rs7158665	14	55235050	G	A	0.49	-0.01092	0.001334	2.60E-16
rs2114612	14	59291426	G	T	0.82	0.010462	0.001716	1.10E-09
rs1503800	14	60280825	T	C	0.98	-0.03033	0.00555	4.60E-08
rs2038432	14	65153526	C	T	0.43	0.010001	0.001343	9.70E-14
rs7150606	14	68413076	G	T	0.86	0.014461	0.001883	1.60E-14
rs1162723	14	69119193	G	C	0.76	0.009709	0.001545	3.30E-10
rs227407	14	70482433	T	C	0.3	-0.00981	0.00146	1.80E-11
rs1288010	14	73729784	G	C	0.81	0.015283	0.001694	1.80E-19
rs730384	14	74889870	G	A	0.56	0.009467	0.00133	1.10E-12
rs6199311	14	79857192	T	C	0.62	0.007404	0.001352	4.30E-08
rs7332354	14	88889886	T	C	0.97	0.020847	0.003632	9.50E-09
rs7547557	14	92102042	T	G	0.89	0.01199	0.002124	1.60E-08
rs7333786	14	92275721	C	A	0.85	-0.01435	0.001844	7.10E-15
rs7333683	14	94576592	C	G	0.82	-0.01099	0.00174	2.70E-10
rs6198058	14	94768833	A	G	0.8	-0.00936	0.001674	2.20E-08
rs5586270	14	94866482	A	G	0.9	-0.01862	0.002241	9.50E-17
rs7448298	14	1.01E+08	A	G	0.96	-0.02128	0.003542	1.90E-09
rs1288587	14	1.04E+08	A	G	0.23	0.015653	0.001609	2.30E-22
rs1162851	14	1.05E+08	A	G	0.37	0.009185	0.001371	2.10E-11
rs7437945	15	38333086	C	A	0.89	-0.0147	0.002129	5.10E-12
rs1492322	15	38365344	A	G	0.94	0.015645	0.002773	1.70E-08
rs8034177	15	40642854	G	A	0.34	-0.00761	0.001391	4.50E-08
rs7633186	15	40660043	G	T	0.98	0.030919	0.005406	1.10E-08
rs7272413	15	41977690	A	T	0.95	0.017915	0.003037	3.70E-09
rs1385707	15	44266730	G	A	0.98	0.023058	0.004187	3.70E-08
rs8042740	15	48686310	C	T	0.91	0.025845	0.00232	8.20E-29
rs1909526	15	50800009	T	C	0.99	0.043005	0.006954	6.30E-10
rs2663530	15	51127650	G	A	0.75	-0.01188	0.001517	4.90E-15
rs1469099	15	51635892	G	A	0.99	0.041548	0.007567	4.00E-08
rs1719144	15	60800145	A	G	0.9	-0.01258	0.002148	4.70E-09
rs782917	15	61399109	G	A	0.78	0.013471	0.001577	1.30E-17
rs2837361	15	62205088	G	A	0.57	0.011076	0.001318	4.30E-17
rs1718425	15	63785421	A	G	0.69	-0.00936	0.001411	3.30E-11
rs2414910	15	66976149	G	T	0.21	0.011011	0.001618	1.00E-11
rs2866183	15	69964322	T	C	0.65	0.012357	0.00142	3.20E-18
rs1695632	15	72143855	A	T	0.78	-0.00978	0.001587	7.10E-10
rs7497390	15	72899534	C	T	0.12	0.012842	0.002045	3.40E-10
rs7274334	15	74072915	C	T	0.91	0.017859	0.002261	2.80E-15
rs7496005	15	74173668	A	G	0.67	-0.01439	0.001397	7.10E-25
rs1173529	15	77042932	T	A	0.98	-0.03239	0.005039	1.30E-10
rs4778890	15	81589648	C	G	0.92	-0.01704	0.002446	3.30E-12
rs1564641	15	81790468	A	G	0.47	-0.00792	0.00132	2.00E-09
rs7972244	15	83976054	G	A	0.93	0.014474	0.00265	4.70E-08

rs1180534:	15	84207648	T	C	0.98	-0.02974	0.005358	2.80E-08
rs1395789:	15	84375611	A	G	0.99	0.038508	0.006123	3.20E-10
rs11813630:	15	84438293	T	G	0.99	-0.04234	0.006384	3.30E-11
rs11638355:	15	84643342	C	T	0.97	-0.0323	0.003861	6.10E-17
rs14020684:	15	84651057	G	A	0.97	0.027463	0.004123	2.70E-11
rs14766050:	15	89337944	G	C	0.98	-0.03033	0.004614	4.90E-11
rs4080952:	15	89398825	C	T	0.46	0.013624	0.001382	6.40E-23
rs7175587:	15	94509588	T	C	0.47	-0.00801	0.001317	1.20E-09
rs12908109:	15	99044519	G	A	0.97	-0.02247	0.003785	2.90E-09
rs13879955:	15	99173787	G	A	0.99	0.049572	0.005524	2.90E-19
rs13886419:	15	99222673	G	A	0.99	0.040453	0.005492	1.80E-13
rs7163054:	15	1.01E+08	G	C	0.82	0.010021	0.001724	6.20E-09
rs11247171:	15	1.01E+08	C	G	0.65	0.01041	0.001377	4.00E-14
rs1055406:	15	1.02E+08	C	T	0.85	0.011968	0.001852	1.00E-10
rs11852310:	15	1.02E+08	G	C	0.18	-0.01445	0.0017	1.90E-17
rs11137119:	16	327060	T	C	0.95	0.018497	0.003135	3.60E-09
rs9924506:	16	364128	C	T	0.66	0.009631	0.001398	5.70E-12
rs62030865:	16	616701	G	A	0.79	-0.01653	0.001622	2.20E-24
rs35168378:	16	920870	C	T	0.97	0.024836	0.00404	7.90E-10
rs11692889:	16	965589	C	A	0.94	-0.01555	0.002835	4.10E-08
rs11389211:	16	2013488	G	T	0.87	-0.01163	0.001968	3.40E-09
rs78183690:	16	2532973	G	C	0.9	-0.0126	0.002285	3.50E-08
rs11075041:	16	12102787	C	T	0.52	-0.00728	0.001312	2.90E-08
rs59834223:	16	14195118	G	A	0.85	-0.01284	0.001931	2.90E-11
rs6498525:	16	15051703	A	G	0.61	-0.00853	0.00156	4.60E-08
rs14920479:	16	16116181	C	A	0.98	0.032324	0.004806	1.70E-11
rs6497337:	16	19244424	A	G	0.35	0.007917	0.001437	3.60E-08
rs12919283:	16	24681460	G	A	0.69	-0.00951	0.001441	4.30E-11
rs34248724:	16	29869176	C	T	0.72	-0.00897	0.001478	1.30E-09
rs62029416:	16	49853190	C	T	0.65	0.010853	0.001377	3.20E-15
rs34652933:	16	51084024	T	C	0.79	0.011373	0.001631	3.10E-12
rs7187949:	16	53408462	T	C	0.73	0.009352	0.001476	2.40E-10
rs58020246:	16	66956610	T	C	0.98	0.030869	0.004581	1.60E-11
rs11761631:	16	66995927	G	A	0.99	-0.04581	0.007837	5.00E-09
rs75280011:	16	67209221	C	A	0.97	0.022167	0.003931	1.70E-08
rs696589:	16	68544498	A	G	0.49	0.00826	0.001324	4.50E-10
rs62050644:	16	70014622	A	G	0.22	0.014171	0.001589	4.80E-19
rs9922596:	16	72006370	C	T	0.78	0.008715	0.001586	3.90E-08
rs62059211:	16	75158159	C	T	0.67	0.009297	0.001405	3.70E-11
rs34349900:	16	78041955	T	A	0.49	-0.00769	0.001318	5.40E-09
rs1424113:	16	79172065	A	G	0.86	-0.01239	0.001882	4.50E-11
rs11639611:	16	81708442	C	T	0.76	0.008764	0.001552	1.60E-08
rs7405197:	16	82169833	C	A	0.36	0.01001	0.001369	2.60E-13
rs36028055:	16	84859672	A	G	0.58	0.007414	0.001336	2.90E-08
rs8044280:	16	88453658	C	G	0.71	-0.00885	0.00148	2.20E-09
rs4782422:	16	88754670	G	A	0.88	0.015232	0.002048	1.00E-13
rs886950:	16	89836872	T	C	0.58	0.007895	0.001333	3.20E-09

rs2663351	17	925006	T	C	0.64	0.007842	0.001387	1.60E-08
rs6502670	17	1328381	G	T	0.37	0.007614	0.001354	1.90E-08
rs6209001	17	1616498	G	A	0.96	0.020189	0.003559	1.40E-08
rs1215005	17	1664469	T	C	0.62	0.00898	0.001356	3.50E-11
rs1186917	17	1965279	G	A	0.98	-0.03239	0.004653	3.40E-12
rs6206258	17	7566274	T	G	0.83	-0.01695	0.001763	6.90E-22
rs7206953	17	8166378	T	C	0.26	-0.00982	0.00148	3.20E-11
rs1477472	17	17752639	C	A	0.99	-0.04271	0.005531	1.10E-14
rs1295291	17	18020050	C	T	0.94	0.015766	0.002844	3.00E-08
rs3587068	17	21135730	A	G	0.77	-0.01129	0.001574	7.30E-13
rs1155597	17	26684368	G	A	0.97	0.021522	0.003827	1.90E-08
rs1170182	17	26909156	C	T	0.97	-0.02425	0.003789	1.50E-10
rs7220401	17	27935688	T	C	0.52	0.008888	0.001312	1.30E-11
rs7888070	17	29437094	T	C	0.98	0.025475	0.004456	1.10E-08
rs1384295	17	29714512	A	G	0.99	0.031759	0.005722	2.80E-08
rs1964662	17	30587802	G	C	0.59	-0.0079	0.001336	3.30E-09
rs1260147	17	36896746	T	C	0.5	-0.00755	0.001324	1.20E-08
rs1245373	17	38177839	A	C	0.59	0.007475	0.001367	4.50E-08
rs7473170	17	39920321	G	A	0.95	0.0184	0.00289	1.90E-10
rs1107905	17	40846131	A	C	0.46	-0.0097	0.001319	1.90E-13
rs1295162	17	43146476	C	G	0.92	0.01462	0.002474	3.50E-09
rs919109	17	46675977	G	C	0.86	-0.01173	0.001897	6.30E-10
rs6206457	17	46708650	G	A	0.89	0.017632	0.00213	1.30E-16
rs1294879	17	47275360	G	A	0.61	-0.00829	0.001348	7.80E-10
rs1155520	17	54172840	T	G	0.58	0.009164	0.001308	2.50E-12
rs1051512	17	54568827	C	T	0.92	-0.01465	0.002353	4.80E-10
rs7225788	17	56815750	C	T	0.72	-0.00843	0.001458	7.50E-09
rs1118570	17	58037413	T	C	0.96	0.020182	0.003573	1.60E-08
rs8080537	17	59452136	A	G	0.06	0.016029	0.002703	3.00E-09
rs1124244	17	59559171	A	C	0.88	-0.01578	0.00229	5.50E-12
rs1444530	17	61150322	C	T	0.98	0.03779	0.005421	3.20E-12
rs7284588	17	61666687	C	T	0.94	-0.03632	0.002813	3.90E-38
rs1404910	17	62564895	G	C	0.95	-0.02362	0.003086	1.90E-14
rs7738811	17	68151469	C	T	0.93	0.021997	0.002493	1.10E-18
rs1232577	17	69873469	C	T	0.86	0.014007	0.001938	4.90E-13
rs1985808	17	73238208	T	C	0.08	-0.01463	0.002415	1.40E-09
rs4490057	17	76375095	A	G	0.5	-0.00932	0.001341	3.70E-12
rs7220955	17	76700063	G	A	0.45	0.010763	0.001316	2.90E-16
rs6207298	17	79048467	C	T	0.64	0.013055	0.001366	1.20E-21
rs4075239	17	79958142	G	C	0.39	-0.00881	0.001343	5.30E-11
rs1166531	18	132649	G	A	0.77	-0.00899	0.001584	1.40E-08
rs5712642	18	2656989	A	G	0.76	0.008852	0.001554	1.20E-08
rs5931389	18	7543681	A	C	0.85	-0.01041	0.001836	1.40E-08
rs6505771	18	12928541	G	A	0.37	0.008631	0.001365	2.50E-10
rs3723342	18	20148559	G	A	0.99	0.037767	0.006684	1.60E-08
rs1464190	18	20236663	C	T	0.99	0.035116	0.006402	4.10E-08
rs1118101	18	20669255	T	G	0.94	-0.01863	0.002858	7.10E-11

rs7433209	18	20830252	C	T	0.88	-0.01276	0.002039	3.90E-10
rs9965569	18	22684089	T	C	0.53	-0.00726	0.001321	4.00E-08
rs7230974	18	22791902	C	T	0.51	0.008313	0.001327	3.80E-10
rs1296476	18	23742176	C	T	0.96	-0.01873	0.003392	3.30E-08
rs9960619	18	33040095	C	T	0.66	-0.01082	0.001384	5.40E-15
rs1460513	18	41457786	C	T	0.73	-0.00907	0.001492	1.20E-09
rs2359883	18	41904611	A	G	0.86	0.010557	0.001891	2.40E-08
rs2060416	18	44576240	G	C	0.54	0.007222	0.001322	4.60E-08
rs1489168	18	45875517	T	A	0.67	-0.00893	0.001417	2.90E-10
rs3736242	18	46474746	C	T	0.76	0.008506	0.001548	3.90E-08
rs7292167	18	46604842	A	T	0.95	-0.01739	0.003097	1.90E-08
rs6567080	18	57034040	C	T	0.84	-0.01088	0.00182	2.20E-09
rs7298924	18	57721198	C	T	0.88	-0.01168	0.002053	1.30E-08
rs7454028	18	74972027	A	T	0.96	0.020941	0.003327	3.10E-10
rs6036797	18	77181332	A	G	0.69	0.011118	0.001436	9.60E-15
rs2285906	19	1008683	G	A	0.85	-0.01192	0.001835	8.30E-11
rs3550046	19	1158884	G	A	0.76	0.009403	0.00155	1.30E-09
rs1051767	19	2099362	C	T	0.67	-0.00851	0.001556	4.50E-08
rs7254775	19	2518325	C	T	0.73	-0.00922	0.001488	5.60E-10
rs6212801	19	3330671	C	T	0.67	0.00799	0.001406	1.30E-08
rs6213146	19	3984788	C	G	0.81	-0.01148	0.001708	1.80E-11
rs6211253	19	4914819	T	C	0.93	-0.02184	0.002598	4.20E-17
rs7833394	19	10253761	G	A	0.95	-0.03517	0.003065	1.80E-30
rs7351481	19	12176709	T	C	0.86	-0.01596	0.001885	2.40E-17
rs590772	19	16411609	C	T	0.88	0.012228	0.002038	2.00E-09
rs8105356	19	17056676	T	C	0.57	0.007423	0.001334	2.60E-08
rs2288544	19	17337025	C	T	0.78	0.009767	0.001588	7.70E-10
rs1431230	19	18109376	G	C	0.97	0.023328	0.00406	9.20E-09
rs7806187	19	18566637	G	A	0.84	0.011316	0.0018	3.30E-10
rs1246190	19	30265235	G	A	0.67	-0.00814	0.001408	7.30E-09
rs8110509	19	30981639	C	A	0.78	-0.01031	0.001612	1.60E-10
rs1040632	19	33890838	C	G	0.52	-0.00722	0.001317	4.10E-08
rs7712753	19	36178698	G	A	0.84	-0.01164	0.001807	1.20E-10
rs6211215	19	36652747	C	T	0.91	-0.01372	0.002256	1.20E-09
rs4803348	19	41118707	G	C	0.64	-0.00748	0.001364	4.20E-08
rs1800468	19	41860587	C	T	0.92	0.014896	0.002385	4.20E-10
rs3481002	19	45440761	A	T	0.5	0.008477	0.001381	8.40E-10
rs8109622	19	46900253	C	G	0.04	-0.02006	0.003257	7.40E-10
rs7624610	19	50121274	G	A	0.92	0.017297	0.002479	3.00E-12
rs1870514	19	55908139	A	G	0.9	0.014853	0.002249	4.00E-11
rs7306110	19	56045712	G	A	0.97	0.049992	0.004125	8.30E-34
rs6051666	20	3213372	T	A	0.8	-0.00912	0.001638	2.60E-08
rs4815645	20	4076588	G	T	0.23	0.008825	0.001561	1.60E-08
rs6116204	20	4088742	A	T	0.84	-0.02069	0.001771	1.50E-31
rs1190853	20	5058969	G	A	0.88	0.014945	0.002055	3.60E-13
rs6085434	20	6184644	C	G	0.49	-0.00749	0.001331	1.90E-08
rs6140015	20	6487524	A	G	0.6	0.024315	0.001339	1.00E-73

rs1114755:	20	6699547	C	T	0.94	-0.01662	0.002832	4.40E-09
rs911641	20	13259045	C	G	0.63	-0.00998	0.001368	3.00E-13
rs2236252	20	17597531	C	T	0.83	0.010216	0.001758	6.20E-09
rs4139524:	20	17777756	G	A	0.73	0.008346	0.001472	1.40E-08
rs6081867	20	20052981	G	A	0.56	0.007229	0.001325	4.90E-08
rs3455446:	20	20368535	A	T	0.76	0.008462	0.00154	3.90E-08
rs1138185:	20	30369090	C	T	0.79	-0.01047	0.001601	6.10E-11
rs7980858:	20	31276337	T	A	0.96	0.019394	0.003264	2.80E-09
rs1170521:	20	31701449	T	A	0.98	-0.03043	0.004474	1.00E-11
rs7797231:	20	32248544	G	A	0.98	0.040432	0.004545	5.80E-19
rs1478185:	20	32473263	C	T	0.99	-0.04419	0.006167	7.70E-13
rs5623868:	20	33236696	G	C	0.9	0.025815	0.002261	3.30E-30
rs1440575:	20	33358593	C	T	0.99	-0.05522	0.00652	2.50E-17
rs1169341:	20	33833838	T	C	0.98	0.030713	0.005205	3.60E-09
rs1426865:	20	33896544	G	A	0.99	-0.06398	0.007979	1.10E-15
rs1169984:	20	34427754	T	G	0.96	-0.03299	0.003336	4.60E-23
rs1177306:	20	35468190	G	A	0.96	-0.03029	0.003527	8.90E-18
rs6011945	20	35950246	G	A	0.98	-0.02714	0.004584	3.20E-09
rs197670	20	44468512	T	C	0.32	-0.00822	0.001404	4.80E-09
rs396221	20	46274089	T	G	0.56	0.007238	0.001319	4.10E-08
rs1304433:	20	47396793	A	C	0.74	-0.00826	0.001511	4.50E-08
rs1343310:	20	47590832	T	G	0.89	0.014162	0.002123	2.50E-11
rs6020421	20	48904038	T	C	0.43	-0.00844	0.001328	2.10E-10
rs6126034	20	49146181	A	T	0.92	-0.01307	0.002381	4.10E-08
rs6024739	20	54839615	T	C	0.24	0.009756	0.001543	2.50E-10
rs1303974:	20	57619428	G	C	0.79	0.010355	0.001617	1.50E-10
rs2274933	20	60897488	G	A	0.78	0.009027	0.001588	1.30E-08
rs1303983:	20	61445370	G	A	0.98	-0.03159	0.00461	7.20E-12
rs372862	21	17320407	G	A	0.18	0.009795	0.001732	1.50E-08
rs2226350	21	27516617	T	C	0.65	0.007647	0.001385	3.40E-08
rs182774	21	28314596	C	A	0.26	-0.00889	0.00151	4.00E-09
rs7722201:	21	28399001	A	G	0.93	0.014016	0.002539	3.40E-08
rs7460136:	21	30030038	A	G	0.91	-0.0142	0.002378	2.40E-09
rs9978987	21	33007192	G	A	0.77	-0.00928	0.00159	5.40E-09
rs7390032:	21	34752952	G	A	0.97	-0.02028	0.003661	3.00E-08
rs1018757	21	35672270	A	G	0.26	-0.01328	0.001502	9.60E-19
rs9976368	21	38587916	A	G	0.69	-0.00811	0.001429	1.40E-08
rs9976523	21	47032395	G	A	0.87	0.011107	0.001976	1.90E-08
rs4819200	21	47516905	C	T	0.92	-0.02415	0.002436	3.70E-23
rs3566508:	22	17625915	G	A	0.94	0.017869	0.002865	4.50E-10
rs2904552	22	18905964	C	T	0.9	-0.01219	0.00222	4.00E-08
rs1638038	22	20775082	G	C	0.63	-0.0122	0.00137	5.10E-19
rs926335	22	28046423	C	T	0.53	-0.00911	0.001325	6.00E-12
rs5752820	22	29258713	A	G	0.97	0.031563	0.003602	1.90E-18
rs5752989	22	30365780	G	A	0.43	0.011362	0.001332	1.40E-17
rs5749473	22	33020619	C	T	0.92	0.016203	0.002437	3.00E-11
rs7714927:	22	36769402	T	G	0.91	-0.01311	0.002337	2.00E-08

rs5750482	22	38117943	T	C	0.37	-0.00869	0.001366	2.00E-10
rs5750823	22	39829973	C	T	0.26	-0.01079	0.001516	1.10E-12
rs11211962	22	41208244	C	T	0.96	0.022233	0.003504	2.20E-10
rs12157531	22	46429851	G	A	0.94	-0.02187	0.002715	8.10E-16
rs4468	22	50167652	T	C	0.58	-0.0098	0.0014	2.60E-12

BMI SNPs for MVMR (after clumping)

SNP	CHR	BP	effect_allele	other_allele	EAF	BETA	SE	P_VALUE
rs28788874	1	1520725	C	T	0.59	0.017324	0.002275	2.60E-14
rs4648827	1	1699201	C	A	0.73	0.012442	0.00223	2.40E-08
rs12409875	1	2424765	G	A	0.51	0.011121	0.00197	1.70E-08
rs7513688	1	6652745	G	A	0.64	-0.01141	0.002061	3.10E-08
rs12128526	1	7723957	G	A	0.54	-0.01113	0.001979	1.90E-08
rs284313	1	10736434	A	G	0.45	0.010819	0.001981	4.70E-08
rs12569355	1	11923737	A	G	0.88	-0.01745	0.003052	1.10E-08
rs9439632	1	16830833	C	T	0.5	-0.01073	0.001968	4.90E-08
rs10917498	1	19906231	G	A	0.76	0.01266	0.002315	4.50E-08
rs309518	1	23253114	A	C	0.35	0.011935	0.002091	1.10E-08
rs6656079	1	32160918	A	G	0.34	-0.01186	0.002107	1.80E-08
rs12561762	1	33225668	G	A	0.81	0.016135	0.002517	1.50E-10
rs12031634	1	34584393	G	A	0.7	0.012963	0.002167	2.20E-09
rs72634501	1	39551488	T	C	0.76	-0.01612	0.002347	6.50E-12
rs7523668	1	42408159	G	A	0.43	0.010891	0.001992	4.60E-08
rs181364381	1	45998888	G	A	0.96	0.030046	0.005135	4.90E-09
rs11211476	1	47648377	C	T	0.53	0.013097	0.002019	8.70E-11
rs12137284	1	49221214	G	A	0.76	-0.01498	0.002321	1.10E-10
rs12735035	1	50221366	A	C	0.43	0.012995	0.001994	7.10E-11
rs640996	1	54714126	C	T	0.33	-0.01208	0.00209	7.60E-09
rs36125117	1	62398246	T	C	0.79	0.013561	0.002434	2.50E-08
rs41313250	1	62483623	A	G	0.88	0.018053	0.003109	6.40E-09
rs12086650	1	65932355	T	C	0.96	-0.02869	0.005029	1.20E-08
rs4255357	1	66399895	G	A	0.47	-0.01327	0.00199	2.60E-11
rs11209896	1	72512988	G	A	0.58	-0.01395	0.001996	2.80E-12
rs6690871	1	74977277	A	G	0.59	-0.01714	0.002019	2.10E-17
rs12035349	1	77557339	A	G	0.87	-0.01855	0.002977	4.60E-10
rs115281275	1	77991129	T	A	0.97	-0.04362	0.00594	2.10E-13
rs71641333	1	78743005	T	A	0.93	-0.02783	0.003893	8.70E-13
rs11162968	1	80784642	T	C	0.68	-0.01327	0.002125	4.30E-10
rs284217	1	82356110	T	C	0.24	0.015897	0.002299	4.70E-12
rs1008078	1	91189731	C	T	0.6	-0.01185	0.002021	4.50E-09
rs3131815	1	92664966	C	T	0.81	-0.01415	0.002492	1.40E-08
rs4274114	1	96254487	C	G	0.27	-0.01499	0.002242	2.30E-11
rs17115758	1	97260472	C	T	0.67	-0.01412	0.002089	1.40E-11
rs4375301	1	98298371	A	G	0.77	-0.01369	0.002343	5.20E-09
rs72697614	1	1.08E+08	C	A	0.68	-0.01268	0.002141	3.10E-09
rs33955687	1	1.08E+08	C	A	0.71	0.0136	0.002221	9.20E-10
rs56218586	1	1.1E+08	G	C	0.94	-0.02348	0.004279	4.10E-08
rs78985438	1	1.11E+08	A	C	0.95	0.023687	0.004338	4.80E-08
rs3754030	1	1.12E+08	C	T	0.46	0.012351	0.001984	4.80E-10
rs7549358	1	1.15E+08	G	C	0.36	0.011689	0.002059	1.40E-08
rs59051938	1	1.19E+08	G	T	0.75	-0.01275	0.002268	1.90E-08
rs1106529	1	1.2E+08	G	A	0.26	0.013634	0.002245	1.20E-09
rs77444832	1	1.5E+08	A	T	0.96	-0.02923	0.005332	4.20E-08
rs114642528	1	1.51E+08	G	A	0.98	-0.03763	0.006843	3.80E-08

rs1870940	1	1.55E+08	G	A	0.73	-0.0141	0.002233	2.70E-10
rs75925257	1	1.55E+08	G	A	0.88	-0.01966	0.003057	1.30E-10
rs76102184	1	1.56E+08	C	T	0.98	-0.05262	0.006671	3.10E-15
rs4614250	1	1.56E+08	T	C	0.07	-0.02286	0.003774	1.40E-09
rs35277691	1	1.71E+08	A	C	0.91	-0.02208	0.00338	6.50E-11
rs148137538	1	1.73E+08	A	G	0.98	0.0382	0.006596	7.00E-09
rs61826818	1	1.74E+08	G	T	0.88	-0.01774	0.003027	4.60E-09
rs149348426	1	1.74E+08	A	T	0.98	0.041264	0.007538	4.40E-08
rs746583	1	1.78E+08	T	C	0.28	-0.01217	0.002209	3.60E-08
rs2068973	1	1.78E+08	G	A	0.66	-0.02259	0.00208	1.80E-27
rs4498770	1	1.85E+08	C	T	0.48	0.011206	0.001969	1.30E-08
rs815342	1	1.9E+08	T	C	0.63	-0.01532	0.002054	8.90E-14
rs10921304	1	1.93E+08	G	A	0.23	0.012709	0.002329	4.80E-08
rs12130221	1	1.95E+08	A	T	0.68	0.011587	0.002121	4.70E-08
rs12140782	1	1.97E+08	C	G	0.69	0.011705	0.002133	4.10E-08
rs704633	1	2.02E+08	A	G	0.35	-0.01328	0.002077	1.60E-10
rs11590076	1	2.02E+08	C	A	0.68	0.012663	0.002115	2.10E-09
rs13303252	1	2.03E+08	C	T	0.82	-0.01521	0.002614	5.90E-09
rs4445469	1	2.09E+08	C	G	0.37	0.011574	0.002059	1.90E-08
rs1395753	1	2.09E+08	A	T	0.87	-0.01612	0.002918	3.30E-08
rs12144127	1	2.1E+08	C	T	0.89	-0.01914	0.003194	2.10E-09
rs7518221	1	2.26E+08	T	C	0.35	0.011513	0.002064	2.40E-08
rs2281721	1	2.3E+08	C	T	0.39	0.011262	0.002026	2.70E-08
rs116434918	1	2.43E+08	T	C	0.96	-0.02734	0.004958	3.50E-08
rs1474053	2	224086	T	A	0.31	0.014382	0.002136	1.70E-11
rs6548228	2	345889	T	C	0.48	0.012928	0.001974	5.70E-11
rs62117023	2	401319	G	A	0.75	-0.01548	0.002295	1.50E-11
rs13387998	2	512327	C	T	0.93	0.028132	0.003763	7.70E-14
rs17729501	2	668618	T	C	0.89	-0.01833	0.00318	8.20E-09
rs1405261	2	6143991	T	A	0.57	0.012419	0.001992	4.60E-10
rs62120278	2	10981461	C	T	0.86	-0.01574	0.002862	3.80E-08
rs72779695	2	12797853	C	T	0.88	-0.01742	0.003071	1.40E-08
rs75971153	2	24689143	T	C	0.8	0.018601	0.002514	1.40E-13
rs75503394	2	25155419	C	T	0.9	-0.03074	0.003348	4.20E-20
rs12468863	2	26940294	C	T	0.48	0.015603	0.001984	3.70E-15
rs7586405	2	28906644	A	G	0.3	0.012038	0.002156	2.30E-08
rs2888152	2	35419380	A	G	0.44	0.011397	0.001997	1.10E-08
rs17019087	2	36783599	T	C	0.63	-0.01172	0.002039	9.20E-09
rs72789156	2	40163488	A	G	0.78	0.013049	0.002377	4.00E-08
rs7420811	2	41508299	A	G	0.54	0.011041	0.002003	3.60E-08
rs1085444	2	44624155	A	G	0.25	-0.01268	0.002262	2.10E-08
rs79870611	2	46680059	G	A	0.96	0.02679	0.004825	2.80E-08
rs17767067	2	46817127	C	T	0.89	-0.01858	0.003141	3.30E-09
rs72618637	2	48953979	T	A	0.81	0.01777	0.002557	3.70E-12
rs80056702	2	50056246	C	T	0.94	-0.02446	0.00421	6.30E-09
rs12997031	2	50689260	G	A	0.58	-0.01379	0.002001	5.50E-12
rs59428052	2	53861389	A	G	0.85	0.017431	0.002881	1.40E-09

rs2289747	2	55198385	G	T	0.69	0.011682	0.002141	4.80E-08
rs2243817	2	57727797	C	G	0.42	-0.011	0.002	3.80E-08
rs6708046	2	58565501	T	C	0.62	-0.01181	0.002036	6.50E-09
rs7591633	2	58872058	A	G	0.39	0.012591	0.002028	5.30E-10
rs2540048	2	59287307	G	C	0.36	-0.01298	0.002065	3.30E-10
rs13424107	2	60203459	G	A	0.63	-0.01228	0.002045	1.90E-09
rs78519266	2	60639636	A	C	0.88	0.016805	0.003024	2.70E-08
rs148242041	2	61753510	C	T	0.99	-0.04827	0.008735	3.30E-08
rs10192894	2	62838936	A	G	0.56	-0.01216	0.001985	8.90E-10
rs6746570	2	67774191	A	C	0.71	0.014943	0.002204	1.20E-11
rs7424376	2	69525923	A	G	0.41	-0.01136	0.002011	1.60E-08
rs61394782	2	81684797	G	A	0.67	-0.01143	0.002094	4.80E-08
rs11127034	2	86648492	G	C	0.39	0.014673	0.002021	3.90E-13
rs6707827	2	1E+08	A	G	0.3	-0.01194	0.002173	3.90E-08
rs11691869	2	1.01E+08	C	A	0.64	0.019316	0.002056	5.60E-21
rs6752675	2	1.04E+08	G	A	0.49	0.0114	0.001971	7.30E-09
rs34080071	2	1.05E+08	C	T	0.78	-0.01599	0.002435	5.20E-11
rs114792668	2	1.06E+08	A	T	0.98	0.037482	0.006851	4.50E-08
rs13033310	2	1.34E+08	G	A	0.75	-0.01261	0.002283	3.30E-08
rs76472225	2	1.36E+08	C	T	0.89	0.017005	0.003093	3.90E-08
rs13033019	2	1.37E+08	T	C	0.23	-0.01269	0.002323	4.70E-08
rs10496885	2	1.42E+08	G	A	0.81	0.013915	0.002534	4.00E-08
rs13028667	2	1.44E+08	G	A	0.86	-0.01829	0.00284	1.20E-10
rs77852018	2	1.46E+08	G	A	0.92	-0.0207	0.003659	1.50E-08
rs2598503	2	1.48E+08	C	T	0.38	0.014443	0.002042	1.50E-12
rs12620249	2	1.55E+08	A	G	0.85	-0.01535	0.002795	4.00E-08
rs12990767	2	1.57E+08	C	T	0.66	0.011714	0.002077	1.70E-08
rs77696192	2	1.59E+08	A	G	0.85	0.015367	0.002788	3.60E-08
rs6711375	2	1.61E+08	G	A	0.32	-0.01249	0.002116	3.60E-09
rs11691134	2	1.65E+08	A	G	0.44	0.011276	0.002025	2.60E-08
rs12477385	2	1.66E+08	G	T	0.77	0.015417	0.002364	7.00E-11
rs7600835	2	1.73E+08	G	A	0.66	0.012346	0.002105	4.50E-09
rs2358443	2	1.75E+08	C	T	0.58	-0.01245	0.002024	7.80E-10
rs1453064	2	1.81E+08	G	T	0.82	-0.01545	0.002578	2.10E-09
rs62190049	2	1.83E+08	G	C	0.61	0.01118	0.002036	4.00E-08
rs6715936	2	1.98E+08	C	T	0.76	0.013546	0.002299	3.80E-09
rs7598328	2	2.04E+08	A	G	0.54	-0.01105	0.001989	2.80E-08
rs79016603	2	2.05E+08	A	G	0.97	-0.03356	0.005507	1.10E-09
rs6707374	2	2.08E+08	C	T	0.81	-0.01416	0.002498	1.50E-08
rs13429850	2	2.08E+08	T	C	0.77	-0.01292	0.002353	4.00E-08
rs113259035	2	2.11E+08	C	G	0.97	-0.03507	0.006183	1.40E-08
rs4673613	2	2.12E+08	T	C	0.69	-0.01344	0.002127	2.70E-10
rs4404217	2	2.13E+08	G	A	0.7	0.01195	0.002168	3.60E-08
rs2384803	2	2.19E+08	G	A	0.68	-0.0133	0.002129	4.20E-10
rs72955435	2	2.2E+08	A	C	0.91	0.019907	0.003463	9.00E-09
rs62201071	2	2.29E+08	T	C	0.54	-0.01171	0.001978	3.20E-09
rs17582010	2	2.31E+08	T	C	0.45	-0.01188	0.001995	2.60E-09

rs12472411	2	2.37E+08	C	T	0.23	0.014171	0.00234	1.40E-09
rs10179060	2	2.37E+08	T	G	0.45	0.010889	0.00198	3.80E-08
rs1145041	3	2365990	C	T	0.5	-0.01101	0.001984	2.90E-08
rs62246311	3	9498143	G	A	0.9	-0.02075	0.003255	1.80E-10
rs17609108	3	11626464	T	C	0.85	-0.0158	0.002833	2.50E-08
rs2920503	3	12324230	C	T	0.71	0.014031	0.002197	1.70E-10
rs434072	3	12916946	T	G	0.29	0.012214	0.002184	2.20E-08
rs2174267	3	15645835	T	C	0.48	-0.01112	0.001975	1.80E-08
rs4619804	3	18674644	A	C	0.26	-0.01228	0.002252	4.90E-08
rs35672995	3	20407929	A	T	0.71	0.012364	0.002196	1.80E-08
rs4858693	3	25077259	A	G	0.57	0.01254	0.002032	6.70E-10
rs11129603	3	34702063	A	T	0.4	-0.01145	0.002013	1.30E-08
rs80082536	3	35195311	A	G	0.88	-0.01757	0.003063	9.60E-09
rs13082065	3	35731993	C	T	0.59	0.01127	0.002005	1.90E-08
rs4377469	3	42303074	G	T	0.11	-0.02195	0.003108	1.60E-12
rs33485	3	42417982	C	T	0.26	0.015335	0.00224	7.60E-12
rs9824340	3	43902170	C	T	0.31	-0.01189	0.002142	2.80E-08
rs4682718	3	44226332	A	G	0.82	-0.01564	0.002555	9.30E-10
rs9838883	3	45220135	C	T	0.67	-0.0135	0.0021	1.30E-10
rs7429588	3	46835250	T	C	0.71	-0.014	0.002275	7.50E-10
rs11716779	3	47606215	A	G	0.73	-0.01342	0.002226	1.70E-09
rs73078357	3	48695834	T	C	0.88	0.02069	0.003015	6.80E-12
rs11718165	3	49696797	A	G	0.71	0.019377	0.002167	3.80E-19
rs62260125	3	50726194	C	T	0.94	-0.02275	0.004158	4.50E-08
rs13090011	3	51728573	G	A	0.16	-0.01544	0.002661	6.60E-09
rs13094687	3	52450043	A	G	0.69	-0.01184	0.002125	2.50E-08
rs62253653	3	53013267	A	G	0.7	0.013214	0.00217	1.10E-09
rs2612028	3	53775447	C	T	0.77	0.013953	0.002336	2.30E-09
rs12491542	3	61130247	C	T	0.88	0.019393	0.003056	2.20E-10
rs6445264	3	62354425	G	A	0.33	-0.01305	0.002194	2.70E-09
rs6769617	3	62687746	A	T	0.34	0.013575	0.002089	8.10E-11
rs56038322	3	69925128	G	A	0.69	-0.01393	0.002148	9.00E-11
rs60344242	3	70472539	C	T	0.81	-0.01415	0.00251	1.70E-08
rs13078509	3	70881429	C	T	0.98	-0.0365	0.006501	2.00E-08
rs775731	3	77624784	C	T	0.41	0.011147	0.002017	3.30E-08
rs7430139	3	82504148	A	G	0.83	0.016066	0.002656	1.50E-09
rs115181984	3	83517326	G	A	0.95	0.032345	0.004549	1.20E-12
rs79273178	3	84517716	C	G	0.94	0.030003	0.004354	5.60E-12
rs2875907	3	85518580	A	G	0.35	0.014103	0.002063	8.20E-12
rs9835772	3	85766025	A	T	0.76	-0.01663	0.002299	4.70E-13
rs17879296	3	85911550	C	A	0.61	0.011322	0.002022	2.20E-08
rs12632094	3	86533434	C	T	0.77	0.012838	0.002347	4.50E-08
rs56112330	3	88022834	T	A	0.69	0.01417	0.002135	3.20E-11
rs73142424	3	88500284	A	G	0.88	0.017623	0.003091	1.20E-08
rs35401223	3	89678599	G	A	0.78	0.013497	0.002408	2.10E-08
rs9713688	3	93505756	T	A	0.75	-0.01461	0.002293	1.90E-10
rs1436341	3	1.05E+08	G	A	0.16	-0.01497	0.002686	2.50E-08

rs62263343	3	1.07E+08	G	A	0.82	-0.01554	0.002599	2.20E-09
rs2219332	3	1.08E+08	T	C	0.38	-0.01149	0.002032	1.60E-08
rs11714846	3	1.14E+08	A	C	0.92	0.020394	0.003676	2.90E-08
rs4688094	3	1.18E+08	G	C	0.47	0.011252	0.002017	2.40E-08
rs9829332	3	1.23E+08	G	T	0.65	0.011965	0.002086	9.70E-09
rs10668	3	1.23E+08	G	T	0.48	0.011677	0.001991	4.50E-09
rs76594121	3	1.28E+08	T	G	0.95	0.02863	0.004808	2.60E-09
rs9823608	3	1.31E+08	A	C	0.18	0.014262	0.002567	2.80E-08
rs6801905	3	1.31E+08	T	C	0.7	0.01521	0.002177	2.80E-12
rs11927890	3	1.32E+08	A	G	0.71	-0.0129	0.002235	8.00E-09
rs6799629	3	1.35E+08	C	T	0.57	0.011591	0.001996	6.30E-09
rs9852406	3	1.36E+08	C	T	0.75	-0.01315	0.002266	6.60E-09
rs6414337	3	1.37E+08	A	G	0.21	-0.01785	0.002417	1.50E-13
rs13092660	3	1.41E+08	G	A	0.08	0.020913	0.00357	4.70E-09
rs12634936	3	1.48E+08	T	C	0.94	-0.02684	0.004535	3.30E-09
rs1568488	3	1.54E+08	G	C	0.41	-0.01531	0.002026	4.20E-14
rs35150748	3	1.56E+08	G	C	0.85	0.015085	0.002764	4.80E-08
rs6805781	3	1.57E+08	G	C	0.6	-0.01106	0.002016	4.10E-08
rs7614120	3	1.58E+08	A	G	0.63	0.011643	0.002049	1.30E-08
rs1515720	3	1.61E+08	C	T	0.47	-0.01109	0.001983	2.20E-08
rs4133068	3	1.7E+08	A	G	0.82	-0.01397	0.002551	4.30E-08
rs12486792	3	1.71E+08	C	G	0.88	-0.01664	0.002987	2.50E-08
rs792361	3	1.73E+08	G	T	0.55	0.014824	0.002021	2.20E-13
rs1805207	3	1.81E+08	C	T	0.36	-0.01134	0.002056	3.50E-08
rs6443750	3	1.81E+08	T	C	0.19	-0.01475	0.002504	3.80E-09
rs262976	3	1.83E+08	A	G	0.41	0.01144	0.002016	1.40E-08
rs6779368	3	1.85E+08	A	G	0.65	0.011715	0.002076	1.70E-08
rs4677813	3	1.95E+08	T	C	0.75	0.012967	0.002278	1.30E-08
rs7639752	3	1.96E+08	G	A	0.51	-0.01099	0.001977	2.70E-08
rs2269498	4	2942541	G	C	0.78	-0.01353	0.002371	1.10E-08
rs6818414	4	16600664	T	C	0.51	-0.01102	0.001981	2.60E-08
rs35852935	4	17991522	A	C	0.96	-0.03015	0.005384	2.10E-08
rs11736501	4	18451423	A	C	0.68	-0.01498	0.002117	1.50E-12
rs4642249	4	20089011	A	G	0.11	0.025231	0.003199	3.10E-15
rs6852497	4	25111387	G	A	0.53	0.011578	0.002017	9.40E-09
rs12649612	4	28353949	G	A	0.82	0.014336	0.002593	3.20E-08
rs7654222	4	30669244	C	T	0.37	0.011122	0.002036	4.70E-08
rs1317830	4	34925064	A	G	0.7	-0.01181	0.002158	4.40E-08
rs6531639	4	38556399	G	A	0.75	0.013629	0.002339	5.70E-09
rs12498157	4	44430025	T	A	0.25	-0.01298	0.00228	1.30E-08
rs62409870	4	45067695	C	G	0.81	0.016265	0.002516	1.00E-10
rs1392615	4	45224500	G	A	0.66	-0.01472	0.002086	1.70E-12
rs4695416	4	48995616	G	A	0.3	0.011824	0.002164	4.70E-08
rs7672724	4	52764013	A	G	0.73	-0.0121	0.002218	4.90E-08
rs2668537	4	54569983	A	G	0.43	0.010894	0.001997	4.90E-08
rs11133338	4	55513275	T	C	0.7	0.014593	0.002167	1.70E-11
rs6551871	4	65643064	C	A	0.67	0.012355	0.002112	4.90E-09

rs6845883	4	67801500	A	G	0.22	0.014441	0.002401	1.80E-09
rs72649373	4	80609966	T	C	0.86	-0.01781	0.002878	6.10E-10
rs2054576	4	89028775	A	G	0.9	0.018556	0.003344	2.90E-08
rs4693209	4	89187068	G	C	0.51	-0.01086	0.001982	4.30E-08
rs10014552	4	94407841	G	T	0.19	-0.01389	0.00253	4.00E-08
rs1863652	4	95991417	G	A	0.65	0.011588	0.00207	2.20E-08
rs1229984	4	1E+08	T	C	0.03	-0.03736	0.005994	4.60E-10
rs2583402	4	1.02E+08	G	A	0.85	-0.01728	0.002777	4.90E-10
rs2851245	4	1.03E+08	A	G	0.32	0.014383	0.002148	2.10E-11
rs233822	4	1.03E+08	A	G	0.6	-0.01134	0.002024	2.10E-08
rs13110448	4	1.13E+08	A	C	0.69	0.011674	0.002126	4.00E-08
rs59068084	4	1.13E+08	G	T	0.59	-0.01106	0.00201	3.80E-08
rs6534743	4	1.31E+08	G	A	0.71	-0.0124	0.002181	1.30E-08
rs10857189	4	1.37E+08	C	T	0.56	-0.01579	0.002006	3.60E-15
rs12186148	4	1.4E+08	G	C	0.57	-0.01104	0.002012	4.10E-08
rs57479509	4	1.41E+08	C	T	0.64	0.011475	0.002077	3.30E-08
rs67997859	4	1.43E+08	T	A	0.88	-0.01795	0.003075	5.30E-09
rs62343136	4	1.46E+08	T	C	0.63	-0.01128	0.002044	3.40E-08
rs113079574	4	1.47E+08	C	T	0.81	0.01559	0.002516	5.80E-10
rs750090	4	1.53E+08	T	C	0.64	0.011426	0.002084	4.20E-08
rs13127585	4	1.62E+08	G	A	0.8	0.013832	0.002471	2.20E-08
rs77978620	4	1.63E+08	C	T	0.8	-0.01407	0.002499	1.80E-08
rs148636479	4	1.64E+08	A	T	0.97	0.038732	0.006321	8.90E-10
rs72694994	4	1.72E+08	G	A	0.86	0.015913	0.002867	2.80E-08
rs4862816	4	1.8E+08	A	G	0.6	-0.01107	0.002021	4.30E-08
rs32736	5	3462896	T	G	0.65	-0.01151	0.002085	3.40E-08
rs72739211	5	27159514	C	A	0.71	0.012764	0.002168	3.90E-09
rs6451674	5	43110754	C	T	0.32	-0.01309	0.002132	8.30E-10
rs17819579	5	50343516	G	A	0.87	-0.01656	0.002947	1.90E-08
rs4469157	5	62693720	G	A	0.42	-0.01105	0.002003	3.40E-08
rs7706303	5	63919136	T	C	0.61	0.011492	0.002025	1.40E-08
rs35951939	5	64086306	G	A	0.6	-0.01171	0.002038	9.00E-09
rs30760	5	66158374	A	G	0.72	0.012724	0.002198	7.10E-09
rs4072296	5	74242002	T	C	0.46	0.015996	0.002047	5.60E-15
rs7707394	5	74472939	G	A	0.64	0.019252	0.002059	8.60E-21
rs6889485	5	75129986	G	A	0.57	0.011898	0.002001	2.70E-09
rs414638	5	77373500	T	G	0.75	0.012619	0.00229	3.60E-08
rs7725131	5	80730198	C	T	0.68	0.011958	0.002119	1.70E-08
rs59756988	5	86555632	A	G	0.99	-0.05028	0.009109	3.40E-08
rs35559400	5	87442528	T	C	0.29	-0.01323	0.00218	1.30E-09
rs10514301	5	87939654	C	T	0.88	-0.03318	0.003047	1.30E-27
rs6891697	5	88768953	T	C	0.5	-0.01187	0.001991	2.50E-09
rs115739620	5	92159026	C	G	0.96	-0.02988	0.005312	1.90E-08
rs148670621	5	92506651	T	A	0.78	0.01403	0.002389	4.30E-09
rs159037	5	94197477	T	C	0.75	-0.01237	0.002268	4.90E-08
rs4538631	5	95405343	C	T	0.7	-0.01205	0.002158	2.40E-08
rs3822683	5	96080883	A	G	0.78	0.0135	0.002388	1.60E-08

rs6869862	5	1.04E+08	T	G	0.52	-0.01159	0.001978	4.60E-09
rs11958027	5	1.06E+08	A	G	0.42	-0.01095	0.002004	4.60E-08
rs1835978	5	1.07E+08	T	C	0.11	-0.02217	0.003201	4.30E-12
rs153570	5	1.12E+08	T	C	0.64	-0.0114	0.00208	4.20E-08
rs9327000	5	1.16E+08	A	C	0.68	0.0117	0.002128	3.80E-08
rs4073708	5	1.19E+08	T	A	0.43	0.011373	0.001999	1.30E-08
rs4836528	5	1.23E+08	T	C	0.59	0.011875	0.002029	4.80E-09
rs6864049	5	1.24E+08	A	G	0.47	-0.01135	0.002003	1.50E-08
rs1363695	5	1.3E+08	C	T	0.77	0.013	0.002383	4.90E-08
rs765504	5	1.34E+08	G	C	0.58	-0.01141	0.002039	2.20E-08
rs28421137	5	1.39E+08	A	G	0.63	-0.01213	0.002061	4.00E-09
rs2879228	5	1.41E+08	G	A	0.77	-0.01313	0.002361	2.60E-08
rs122726	5	1.44E+08	T	C	0.68	-0.01256	0.002133	4.00E-09
rs2118793	5	1.53E+08	C	A	0.42	0.011834	0.00201	3.90E-09
rs6580044	5	1.53E+08	G	A	0.28	0.012239	0.002204	2.80E-08
rs17056301	5	1.58E+08	T	C	0.74	-0.01358	0.00227	2.20E-09
rs32421	5	1.67E+08	A	T	0.78	-0.01323	0.002378	2.60E-08
rs2003850	5	1.68E+08	C	T	0.67	0.011936	0.002111	1.60E-08
rs6555924	5	1.7E+08	T	C	0.25	-0.01384	0.002323	2.60E-09
rs1885728	6	5977833	G	A	0.32	-0.01163	0.002133	4.90E-08
rs9463175	6	9510030	C	T	0.66	0.0115	0.002101	4.40E-08
rs9296258	6	12084445	C	G	0.28	-0.01355	0.002211	9.00E-10
rs62385532	6	13161394	G	A	0.71	0.013692	0.002189	4.00E-10
rs5017416	6	18492350	G	T	0.95	-0.02832	0.004622	9.00E-10
rs4134939	6	20481825	T	C	0.32	0.011747	0.002152	4.80E-08
rs7760082	6	21919387	G	A	0.33	0.012084	0.0021	8.70E-09
rs9466937	6	23858932	C	T	0.68	-0.0123	0.002125	7.20E-09
rs35436081	6	25700342	G	A	0.88	-0.01739	0.003072	1.50E-08
rs9358909	6	26153545	G	C	0.82	0.016856	0.002542	3.30E-11
rs853685	6	28288785	C	T	0.84	-0.01458	0.002671	4.90E-08
rs3117433	6	29303364	T	C	0.83	-0.01522	0.002598	4.70E-09
rs55777621	6	30584133	G	A	0.97	-0.03199	0.00538	2.70E-09
rs2768	6	31321856	A	G	0.75	0.013229	0.00228	6.50E-09
rs2260051	6	31591918	A	T	0.44	-0.01921	0.001986	4.00E-22
rs17612712	6	32615945	A	T	0.58	-0.0123	0.002145	9.70E-09
rs2282850	6	33267103	C	T	0.8	-0.01817	0.00248	2.40E-13
rs56348792	6	34161299	C	T	0.87	-0.01623	0.002967	4.50E-08
rs3778076	6	34513266	C	A	0.94	-0.0238	0.004325	3.70E-08
rs9469813	6	34569814	T	C	0.88	-0.01649	0.003023	4.90E-08
rs9368882	6	35638976	A	G	0.26	-0.01264	0.002258	2.10E-08
rs11752896	6	40321473	A	G	0.44	0.012211	0.001988	8.10E-10
rs34728916	6	40385819	A	G	0.85	-0.01971	0.002793	1.70E-12
rs113820722	6	41720082	A	T	0.9	0.017876	0.003257	4.10E-08
rs3818086	6	42672416	A	T	0.47	0.011106	0.001982	2.10E-08
rs140163521	6	43515096	T	A	0.98	0.043041	0.007125	1.50E-09
rs4711750	6	43757082	T	A	0.5	0.011491	0.001974	5.80E-09
rs12055796	6	46306547	T	C	0.48	-0.01158	0.001979	4.80E-09

rs17737350	6	50201014	G	A	0.96	-0.02676	0.004904	4.80E-08
rs75359967	6	50491551	C	G	0.92	0.022109	0.003631	1.10E-09
rs2465031	6	51148435	T	C	0.4	-0.01488	0.002049	3.80E-13
rs9395707	6	51572515	G	A	0.68	-0.01167	0.002124	3.90E-08
rs6924570	6	55190291	C	T	0.82	-0.0146	0.002666	4.40E-08
rs1504369	6	63894206	C	A	0.3	0.011865	0.002172	4.70E-08
rs72910629	6	69761994	A	G	0.86	-0.01629	0.002898	1.90E-08
rs6924504	6	73174691	C	T	0.72	0.012295	0.002204	2.40E-08
rs6939569	6	80307921	A	G	0.85	-0.01522	0.002751	3.10E-08
rs390192	6	83359135	A	G	0.48	0.014312	0.001989	6.20E-13
rs1209058	6	90127099	G	T	0.26	0.012749	0.002251	1.50E-08
rs1206133	6	97543137	C	T	0.25	0.013904	0.002323	2.20E-09
rs17057975	6	98179726	T	G	0.67	0.014332	0.002113	1.20E-11
rs17789218	6	1.01E+08	T	C	0.76	-0.01265	0.002296	3.60E-08
rs240764	6	1.01E+08	G	A	0.53	-0.01191	0.001992	2.20E-09
rs201203	6	1.05E+08	T	C	0.15	-0.0158	0.002838	2.60E-08
rs1575676	6	1.09E+08	C	T	0.63	0.016131	0.002046	3.20E-15
rs9387640	6	1.2E+08	C	T	0.64	0.012767	0.002053	5.00E-10
rs62419053	6	1.24E+08	G	A	0.82	0.014238	0.002604	4.50E-08
rs576646	6	1.25E+08	A	G	0.41	0.011677	0.002032	9.10E-09
rs1268070	6	1.26E+08	C	T	0.53	0.01088	0.001988	4.50E-08
rs2749929	6	1.32E+08	T	C	0.79	-0.01359	0.00243	2.30E-08
rs28630726	6	1.41E+08	T	A	0.95	-0.02432	0.004406	3.40E-08
rs6925979	6	1.43E+08	G	A	0.81	-0.01396	0.002516	2.90E-08
rs118657	6	1.43E+08	C	A	0.63	-0.0114	0.002053	2.80E-08
rs2256216	6	1.47E+08	A	G	0.46	-0.01167	0.002026	8.50E-09
rs7755574	6	1.53E+08	G	T	0.72	-0.01489	0.002195	1.20E-11
rs12207125	6	1.54E+08	A	G	0.78	0.013511	0.002397	1.70E-08
rs9478663	6	1.56E+08	G	A	0.78	-0.01324	0.002406	3.70E-08
rs34540135	6	1.63E+08	A	G	0.87	0.020391	0.003029	1.70E-11
rs6950388	7	1270699	G	A	0.2	-0.01552	0.002448	2.30E-10
rs6965555	7	1820158	A	G	0.77	0.013907	0.002361	3.80E-09
rs2396962	7	3104205	C	A	0.83	-0.0157	0.002648	3.00E-09
rs4397303	7	6413023	C	A	0.87	-0.0168	0.002926	9.40E-09
rs9638713	7	14645949	A	G	0.03	0.036174	0.006354	1.20E-08
rs10263780	7	19778086	G	A	0.86	0.016754	0.002886	6.40E-09
rs16110	7	24339008	G	C	0.48	0.011373	0.001991	1.10E-08
rs73683491	7	26695578	G	C	0.91	-0.01958	0.00352	2.70E-08
rs10274928	7	28142088	A	G	0.48	-0.01106	0.001979	2.30E-08
rs17161045	7	32261458	T	C	0.63	-0.0125	0.002062	1.30E-09
rs1229057	7	39054538	C	T	0.88	-0.01713	0.003088	2.90E-08
rs10268735	7	39376022	A	G	0.66	0.012183	0.002097	6.30E-09
rs799442	7	44768421	G	A	0.33	-0.01257	0.002105	2.40E-09
rs1544434	7	49542313	G	A	0.39	0.011294	0.002032	2.70E-08
rs732215	7	50544063	A	C	0.56	0.011386	0.001993	1.10E-08
rs13228123	7	69592701	G	T	0.74	-0.01339	0.002253	2.80E-09
rs3973896	7	71428960	C	G	0.83	0.016188	0.002664	1.20E-09

rs34762099	7	74050694	T	C	0.74	-0.01621	0.002264	8.20E-13
rs113744930	7	75053499	G	A	0.88	-0.02222	0.002989	1.10E-13
rs794368	7	75185985	A	G	0.42	0.01239	0.002042	1.30E-09
rs3912195	7	76502067	G	A	0.89	-0.02087	0.003195	6.50E-11
rs6971149	7	77024300	C	T	0.69	-0.01175	0.002134	3.60E-08
rs10260232	7	78120735	C	T	0.5	-0.01314	0.001989	4.00E-11
rs2158045	7	93082708	C	T	0.52	-0.01146	0.00199	8.40E-09
rs6465737	7	98725348	T	G	0.21	-0.01389	0.002428	1.10E-08
rs6955490	7	98974588	G	A	0.9	0.01792	0.003246	3.40E-08
rs2074686	7	1.01E+08	G	A	0.41	0.011595	0.002011	8.10E-09
rs17290575	7	1.03E+08	A	G	0.84	-0.01474	0.002698	4.70E-08
rs76672197	7	1.11E+08	T	C	0.95	-0.02546	0.004446	1.00E-08
rs1608891	7	1.13E+08	G	A	0.68	-0.01208	0.002134	1.50E-08
rs6944092	7	1.13E+08	A	G	0.63	-0.0161	0.002049	3.80E-15
rs936146	7	1.14E+08	G	C	0.53	-0.01398	0.001988	2.10E-12
rs988720	7	1.22E+08	T	C	0.79	-0.01417	0.00243	5.50E-09
rs3800637	7	1.37E+08	T	C	0.66	-0.01153	0.002107	4.40E-08
rs62485917	7	1.39E+08	T	C	0.9	0.018307	0.003309	3.20E-08
rs62491416	7	1.4E+08	T	C	0.9	-0.01823	0.003334	4.60E-08
rs4725969	7	1.51E+08	C	T	0.66	0.012891	0.002099	8.10E-10
rs1658820	8	4288577	G	T	0.75	-0.01448	0.002313	3.80E-10
rs2980436	8	8092025	G	A	0.54	-0.01598	0.001995	1.10E-15
rs6988251	8	9094112	A	G	0.61	0.01177	0.002045	8.60E-09
rs12156030	8	10097522	C	G	0.56	0.016551	0.001997	1.10E-16
rs6601575	8	11097804	C	A	0.46	0.01412	0.001999	1.60E-12
rs10087422	8	12149239	C	T	0.45	-0.01755	0.002821	5.00E-10
rs34803352	8	14042304	T	C	0.66	-0.01273	0.002091	1.10E-09
rs2543132	8	15536311	G	C	0.19	-0.01398	0.00254	3.70E-08
rs1470687	8	20628793	C	G	0.67	0.013445	0.002111	1.90E-10
rs73225274	8	21088909	A	G	0.87	-0.01659	0.002911	1.20E-08
rs6557791	8	21949663	T	C	0.41	0.011083	0.002023	4.30E-08
rs11784090	8	23377161	C	T	0.86	0.016235	0.002892	2.00E-08
rs12547975	8	25630398	G	A	0.74	-0.01239	0.002265	4.50E-08
rs17446091	8	27167942	T	C	0.8	-0.01476	0.002465	2.10E-09
rs73226800	8	28017305	A	G	0.87	-0.01658	0.002948	1.90E-08
rs17647894	8	30820168	C	A	0.57	0.012067	0.001997	1.50E-09
rs2347491	8	32339191	A	G	0.35	-0.01133	0.002075	4.80E-08
rs7815496	8	38321607	C	T	0.6	-0.01237	0.002019	8.90E-10
rs35894137	8	43071838	C	T	0.92	0.019899	0.003634	4.40E-08
rs1115041	8	60706297	T	C	0.34	-0.0115	0.002086	3.60E-08
rs12681792	8	62054463	C	A	0.81	-0.01487	0.002517	3.50E-09
rs7822926	8	64701966	A	C	0.53	0.012037	0.001984	1.30E-09
rs6989260	8	67194135	T	C	0.73	0.014055	0.002247	4.00E-10
rs1653246	8	73426274	T	C	0.19	0.019561	0.002534	1.20E-14
rs34485744	8	74680289	G	A	0.88	-0.0176	0.003109	1.50E-08
rs1841329	8	76297805	T	C	0.23	-0.01619	0.002364	7.30E-12
rs10096778	8	77297935	T	C	0.3	-0.01394	0.002155	1.00E-10

rs1252199	8	85468280	A	G	0.24	-0.0156	0.002343	2.70E-11
rs57644875	8	87383347	C	T	0.54	0.011366	0.001983	9.90E-09
rs7838200	8	93228338	T	C	0.66	0.011456	0.002093	4.40E-08
rs4503069	8	94646440	A	G	0.28	-0.01239	0.002215	2.20E-08
rs112520079	8	95594425	T	G	0.8	-0.01493	0.002474	1.60E-09
rs3105460	8	1.02E+08	A	G	0.39	-0.01271	0.002034	4.20E-10
rs231144	8	1.16E+08	T	C	0.2	-0.0139	0.002509	3.00E-08
rs11781699	8	1.19E+08	T	C	0.82	-0.01414	0.002558	3.30E-08
rs2954017	8	1.26E+08	T	C	0.48	-0.01161	0.00198	4.50E-09
rs55668203	8	1.33E+08	T	C	0.89	-0.01736	0.003163	4.00E-08
rs73712227	8	1.38E+08	C	G	0.94	0.023852	0.004257	2.10E-08
rs13266268	8	1.43E+08	C	T	0.61	-0.01303	0.002096	5.00E-10
rs28640269	8	1.43E+08	G	A	0.47	-0.01085	0.001988	4.90E-08
rs7046665	9	6947484	T	G	0.66	0.011701	0.002086	2.00E-08
rs1352522	9	11265159	A	T	0.47	-0.01105	0.001985	2.60E-08
rs17277467	9	13939884	C	T	0.81	0.013984	0.002512	2.60E-08
rs10810147	9	14442045	G	A	0.59	0.011618	0.002019	8.70E-09
rs923926	9	14765030	T	C	0.69	-0.01222	0.002161	1.60E-08
rs7857933	9	15516375	G	A	0.93	0.026126	0.004023	8.30E-11
rs10962547	9	16712247	T	A	0.83	-0.02282	0.002627	3.70E-18
rs12376006	9	23192478	T	C	0.62	0.011555	0.00205	1.70E-08
rs1342097	9	27748698	A	T	0.53	-0.012	0.001994	1.80E-09
rs34343198	9	28474484	A	T	0.97	-0.03469	0.005867	3.40E-09
rs11792311	9	29672405	G	A	0.76	0.013441	0.002327	7.60E-09
rs16916303	9	30823761	A	G	0.88	0.019237	0.003079	4.20E-10
rs10971708	9	33803271	T	A	0.89	0.01882	0.003218	5.00E-09
rs7020776	9	36972274	C	A	0.23	-0.01309	0.002339	2.20E-08
rs7038966	9	73777777	C	T	0.59	-0.01312	0.00202	8.30E-11
rs10869977	9	80457276	A	G	0.44	-0.01124	0.002	1.90E-08
rs12342093	9	81341229	G	T	0.59	0.011753	0.002021	6.00E-09
rs6559921	9	88872039	A	T	0.78	0.013245	0.002386	2.80E-08
rs35340801	9	92131699	T	A	0.76	-0.01299	0.002332	2.50E-08
rs2482702	9	94175624	A	G	0.57	0.011132	0.001999	2.50E-08
rs11999013	9	96154352	A	C	0.84	-0.01487	0.002682	3.00E-08
rs1547205	9	98815145	G	C	0.9	0.018687	0.003347	2.40E-08
rs10988763	9	1.02E+08	A	G	0.61	0.011288	0.002045	3.40E-08
rs846761	9	1.03E+08	G	A	0.43	-0.01102	0.001993	3.20E-08
rs2151131	9	1.03E+08	C	G	0.2	-0.01359	0.002473	3.90E-08
rs1484375	9	1.09E+08	A	G	0.22	0.013615	0.002382	1.10E-08
rs2417998	9	1.12E+08	C	G	0.29	0.012119	0.002185	2.90E-08
rs12376870	9	1.18E+08	G	A	0.76	0.013167	0.00233	1.60E-08
rs28693508	9	1.2E+08	C	G	0.66	0.013894	0.002087	2.80E-11
rs10818101	9	1.21E+08	T	C	0.56	0.011143	0.001995	2.30E-08
rs4837904	9	1.25E+08	T	C	0.3	0.012312	0.00217	1.40E-08
rs10985966	9	1.26E+08	C	A	0.62	-0.01372	0.002044	1.90E-11
rs113171806	9	1.27E+08	T	C	0.89	-0.01698	0.003112	4.80E-08
rs7027304	9	1.29E+08	C	T	0.35	-0.01455	0.002087	3.10E-12

rs74532781	9	1.31E+08	G	A	0.85	-0.01777	0.002786	1.80E-10
rs10751510	9	1.34E+08	G	A	0.6	-0.01244	0.002024	7.80E-10
rs28670671	9	1.4E+08	T	C	0.71	0.012464	0.002264	3.70E-08
rs11792069	9	1.41E+08	A	G	0.82	0.014385	0.00256	1.90E-08
rs3864820	10	16721066	T	A	0.33	-0.01253	0.002124	3.70E-09
rs73601548	10	18549889	C	T	0.89	-0.01774	0.003116	1.30E-08
rs10764256	10	20905269	C	T	0.77	0.01447	0.002366	9.60E-10
rs946711	10	21806832	A	C	0.67	-0.01856	0.002115	1.70E-18
rs35278107	10	33949897	C	T	0.76	-0.01274	0.002335	4.90E-08
rs10763587	10	52356264	C	T	0.69	-0.01199	0.00217	3.30E-08
rs10823735	10	53620668	G	A	0.75	-0.01438	0.002283	3.00E-10
rs7070670	10	61842645	C	T	0.67	0.012327	0.002119	6.00E-09
rs3125326	10	63053788	A	C	0.39	-0.01158	0.002046	1.50E-08
rs4746855	10	64822828	G	A	0.6	0.011623	0.002018	8.40E-09
rs1227242	10	66590218	A	T	0.67	-0.01184	0.002112	2.10E-08
rs35972789	10	75519691	C	A	0.96	0.028708	0.005205	3.50E-08
rs2279648	10	75867193	G	T	0.87	-0.01854	0.002944	3.00E-10
rs11001296	10	76873427	T	C	0.8	-0.01363	0.002477	3.70E-08
rs11001963	10	78760959	C	T	0.42	-0.01168	0.002019	7.30E-09
rs12412597	10	87339257	G	A	0.95	-0.02853	0.004548	3.60E-10
rs10887571	10	88030441	C	T	0.55	-0.01166	0.002003	5.90E-09
rs2450446	10	93005457	C	T	0.7	0.013152	0.002165	1.20E-09
rs1468069	10	98988759	A	C	0.34	0.011515	0.002082	3.20E-08
rs2147878	10	99743774	T	C	0.68	-0.01282	0.002132	1.80E-09
rs10883057	10	1E+08	G	C	0.72	0.014156	0.002234	2.30E-10
rs17094222	10	1.02E+08	T	C	0.79	-0.01534	0.002421	2.40E-10
rs2815401	10	1.04E+08	C	T	0.11	-0.01736	0.003112	2.40E-08
rs4919644	10	1.04E+08	G	A	0.9	-0.01926	0.003256	3.30E-09
rs79780963	10	1.05E+08	C	T	0.92	-0.02368	0.003696	1.50E-10
rs7917983	10	1.15E+08	T	C	0.53	0.011929	0.001981	1.70E-09
rs11197820	10	1.19E+08	G	A	0.59	0.012114	0.002023	2.10E-09
rs11199266	10	1.22E+08	A	G	0.64	-0.0114	0.002065	3.30E-08
rs845076	10	1.25E+08	G	A	0.72	-0.01246	0.002217	1.90E-08
rs11245403	10	1.27E+08	T	A	0.77	0.013815	0.00236	4.80E-09
rs3781412	10	1.27E+08	A	G	0.6	-0.01117	0.002022	3.30E-08
rs2542643	10	1.31E+08	A	G	0.35	0.011684	0.002105	2.80E-08
rs56184113	10	1.33E+08	A	G	0.8	0.013715	0.002475	3.00E-08
rs11146206	10	1.34E+08	C	T	0.59	0.010969	0.002008	4.70E-08
rs7104929	11	784340	C	G	0.53	-0.01112	0.001983	2.10E-08
rs7479171	11	926809	G	A	0.36	-0.01221	0.002058	2.90E-09
rs146569428	11	2199686	G	A	0.8	-0.01395	0.002486	2.00E-08
rs10766451	11	2917510	C	T	0.68	-0.01195	0.002129	2.00E-08
rs12802861	11	8387806	C	T	0.71	0.012216	0.002195	2.60E-08
rs897356	11	11762321	C	G	0.42	0.010949	0.002007	4.90E-08
rs7947920	11	13230633	T	C	0.54	-0.01157	0.001984	5.60E-09
rs7945898	11	16508865	C	T	0.8	-0.01366	0.002488	4.00E-08
rs35298551	11	27224030	T	C	0.84	0.01527	0.002728	2.20E-08

rs79113278	11	27463447	G	A	0.97	-0.03134	0.005725	4.40E-08
rs36094062	11	28260678	A	T	0.91	0.021498	0.003513	9.40E-10
rs7952432	11	29174198	T	C	0.87	0.015925	0.002903	4.10E-08
rs67670125	11	30214914	C	T	0.77	0.015219	0.002357	1.10E-10
rs11031114	11	30517812	A	T	0.68	-0.01162	0.002113	3.80E-08
rs982243	11	43529703	A	G	0.51	0.012078	0.001977	9.90E-10
rs2679055	11	43610813	T	C	0.55	0.01188	0.001985	2.20E-09
rs10838201	11	43937089	A	T	0.57	0.011902	0.002001	2.70E-09
rs4755317	11	45351376	A	G	0.18	-0.01414	0.002584	4.50E-08
rs117276117	11	45709380	G	T	0.99	-0.05115	0.008535	2.10E-09
rs11039130	11	47229316	C	T	0.7	0.013503	0.002177	5.60E-10
rs3729986	11	47371598	C	T	0.9	-0.01783	0.003255	4.30E-08
rs1228001	11	47986994	A	T	0.48	-0.01086	0.001975	3.90E-08
rs12363672	11	55684028	A	C	0.97	-0.03383	0.006193	4.70E-08
rs11608180	11	63941110	A	G	0.92	0.023744	0.003737	2.10E-10
rs1075692	11	65212447	A	G	0.77	-0.01325	0.002366	2.20E-08
rs72924707	11	65576803	T	C	0.97	0.036763	0.006241	3.90E-09
rs801739	11	65922589	A	G	0.52	0.011159	0.00198	1.70E-08
rs23691	11	68178668	G	A	0.33	-0.01165	0.00211	3.40E-08
rs7951796	11	69296607	G	A	0.58	0.012191	0.002021	1.60E-09
rs7942337	11	76465272	C	T	0.78	0.015238	0.002429	3.50E-10
rs11234234	11	84613381	T	A	0.48	0.013211	0.001995	3.50E-11
rs74395215	11	89067324	T	A	0.93	-0.02194	0.003983	3.60E-08
rs2045460	11	93206237	T	C	0.52	0.011705	0.001979	3.30E-09
rs719802	11	1.13E+08	T	C	0.39	0.011928	0.002029	4.20E-09
rs2187986	11	1.15E+08	G	A	0.53	-0.01376	0.002015	8.50E-12
rs142174850	11	1.17E+08	G	A	0.94	-0.02331	0.004177	2.40E-08
rs141752759	11	1.18E+08	C	G	0.98	0.042941	0.006903	4.90E-10
rs10892501	11	1.2E+08	G	A	0.39	0.012207	0.00204	2.20E-09
rs7950488	11	1.22E+08	C	T	0.63	0.011894	0.002053	6.90E-09
rs10892870	11	1.23E+08	A	G	0.61	-0.01126	0.002032	3.00E-08
rs10894265	11	1.31E+08	T	C	0.46	0.011607	0.00199	5.40E-09
rs318945	11	1.31E+08	C	T	0.44	-0.01199	0.001989	1.70E-09
rs11222896	11	1.32E+08	C	T	0.7	0.013087	0.00217	1.60E-09
rs7350477	11	1.33E+08	T	C	0.65	-0.01257	0.002081	1.50E-09
rs2156675	11	1.34E+08	G	A	0.23	-0.01456	0.002369	8.00E-10
rs34669406	11	1.34E+08	G	A	0.82	0.014805	0.002596	1.20E-08
rs3088353	12	862641	T	G	0.54	-0.01404	0.002036	5.40E-12
rs2429148	12	2149824	A	G	0.59	-0.01106	0.002022	4.50E-08
rs12422552	12	14413931	G	C	0.73	0.013486	0.00224	1.70E-09
rs1671485	12	16426631	C	T	0.86	-0.01585	0.00283	2.10E-08
rs7313220	12	17196832	A	G	0.49	0.011821	0.001982	2.40E-09
rs11044430	12	19287416	T	A	0.14	-0.01829	0.002875	2.00E-10
rs11608710	12	23753927	T	G	0.94	-0.02485	0.004153	2.20E-09
rs10842231	12	23986029	A	T	0.92	-0.02243	0.003611	5.20E-10
rs118008706	12	39979911	A	T	0.98	-0.04054	0.0074	4.30E-08
rs971998	12	41806405	G	C	0.54	-0.01261	0.001987	2.20E-10

rs76573653	12	49380073	T	G	0.96	-0.02988	0.005135	5.90E-09
rs2720296	12	50169070	G	A	0.61	-0.01611	0.00208	9.40E-15
rs6580805	12	51587295	A	G	0.22	0.01335	0.002444	4.70E-08
rs1486339	12	54620593	C	A	0.51	0.012425	0.001984	3.80E-10
rs2069408	12	56364321	A	G	0.66	0.015188	0.002094	4.00E-13
rs113397893	12	57611285	A	G	0.92	-0.02214	0.003692	2.00E-09
rs12313099	12	60950166	G	T	0.8	-0.01361	0.002495	4.90E-08
rs7306534	12	68107914	G	A	0.38	0.011275	0.002054	4.10E-08
rs317630	12	69637847	T	C	0.28	0.014238	0.002215	1.30E-10
rs61754230	12	72179446	C	T	0.98	-0.04428	0.007108	4.70E-10
rs11115160	12	82424100	G	A	0.76	0.013077	0.002336	2.20E-08
rs797091	12	89724927	T	C	0.82	-0.01462	0.002606	2.00E-08
rs12579003	12	90161860	C	T	0.91	0.020718	0.003555	5.60E-09
rs4294610	12	97498715	C	G	0.4	0.011208	0.002024	3.10E-08
rs1319892	12	99436519	T	C	0.36	0.013276	0.002072	1.50E-10
rs2139555	12	1.04E+08	C	T	0.43	0.01508	0.002009	6.00E-14
rs961498	12	1.08E+08	G	C	0.5	-0.01198	0.001993	1.80E-09
rs1895951	12	1.08E+08	T	C	0.78	0.016691	0.002404	3.80E-12
rs117514387	12	1.1E+08	C	T	0.92	-0.01997	0.003649	4.40E-08
rs34840178	12	1.11E+08	A	G	0.6	-0.01104	0.002024	4.90E-08
rs77555224	12	1.14E+08	C	T	0.93	0.021414	0.003893	3.80E-08
rs111828690	12	1.18E+08	C	T	0.78	-0.01369	0.002396	1.10E-08
rs9805009	12	1.18E+08	C	G	0.71	0.012306	0.002189	1.90E-08
rs61945850	12	1.21E+08	G	A	0.96	0.028155	0.005142	4.40E-08
rs11608486	12	1.22E+08	G	C	0.86	-0.01662	0.002806	3.20E-09
rs181617194	12	1.22E+08	T	C	0.96	0.031298	0.005428	8.10E-09
rs4758677	12	1.23E+08	G	A	0.73	-0.01302	0.002256	7.90E-09
rs11059476	12	1.23E+08	C	T	0.94	0.028701	0.004302	2.50E-11
rs75759977	12	1.24E+08	G	T	0.95	0.025779	0.004492	9.50E-09
rs77055232	12	1.33E+08	C	T	0.69	-0.01173	0.002143	4.40E-08
rs9579775	13	20616557	A	C	0.86	-0.02112	0.003006	2.10E-12
rs4238202	13	27902148	A	G	0.26	-0.01241	0.00227	4.60E-08
rs2491241	13	28613279	G	A	0.41	0.011975	0.002013	2.70E-09
rs2104736	13	30990048	C	T	0.62	0.012449	0.002081	2.20E-09
rs472873	13	32989794	T	C	0.61	-0.01161	0.002031	1.10E-08
rs10507483	13	40759773	T	C	0.83	-0.01605	0.002654	1.50E-09
rs9596810	13	54056553	C	T	0.57	0.013258	0.002057	1.20E-10
rs9316661	13	54354615	T	C	0.2	0.015593	0.002485	3.50E-10
rs2408992	13	54692000	T	A	0.12	0.018574	0.003027	8.50E-10
rs9569725	13	58251987	C	T	0.75	0.015842	0.00229	4.50E-12
rs2590996	13	58653021	A	T	0.68	-0.01173	0.002135	3.90E-08
rs9569932	13	59255862	A	G	0.8	0.016168	0.002466	5.50E-11
rs308597	13	62670010	T	C	0.41	0.011506	0.002013	1.10E-08
rs2587591	13	64240088	G	A	0.08	-0.02002	0.00364	3.80E-08
rs9540244	13	65434926	C	T	0.77	0.012948	0.00237	4.70E-08
rs9540493	13	66205704	A	G	0.45	0.011996	0.001998	1.90E-09
rs1998607	13	67414341	T	C	0.38	-0.01233	0.002052	1.90E-09

rs1146917	13	78310954	T	C	0.71	0.012572	0.002198	1.10E-08
rs1980993	13	79554321	A	G	0.48	-0.0111	0.002015	3.60E-08
rs672187	13	86322246	C	A	0.73	0.014979	0.002299	7.20E-11
rs76134593	13	90395288	G	T	0.98	-0.04485	0.007724	6.40E-09
rs9556514	13	96609478	A	C	0.73	-0.01212	0.002221	4.80E-08
rs9517310	13	99100474	C	T	0.7	0.012026	0.00216	2.60E-08
rs7992207	13	1.04E+08	G	C	0.85	0.015104	0.002758	4.40E-08
rs9520320	13	1.08E+08	T	A	0.47	-0.01159	0.002027	1.10E-08
rs9515381	13	1.12E+08	T	C	0.59	0.011103	0.002019	3.80E-08
rs4771755	13	1.12E+08	G	A	0.26	-0.01326	0.002255	4.10E-09
rs7141213	14	25878636	C	T	0.43	0.013827	0.002001	4.90E-12
rs12586987	14	29569260	C	T	0.81	0.013789	0.002522	4.60E-08
rs12885099	14	29882863	G	A	0.4	-0.01181	0.002044	7.60E-09
rs2230505	14	30066929	A	G	0.62	-0.01167	0.002048	1.20E-08
rs2383377	14	33257914	G	A	0.87	-0.01613	0.002936	3.90E-08
rs112936150	14	35367967	G	A	0.9	0.018871	0.003396	2.70E-08
rs2415554	14	40100535	T	C	0.73	-0.01237	0.002229	2.80E-08
rs61986203	14	41268073	G	T	0.92	-0.02165	0.003658	3.30E-09
rs12889085	14	42885336	A	G	0.57	-0.01304	0.002008	8.40E-11
rs4506807	14	46794059	G	A	0.6	-0.01127	0.002025	2.60E-08
rs217667	14	62358847	C	T	0.75	-0.01649	0.002292	6.30E-13
rs3902951	14	69789755	T	G	0.76	-0.0141	0.002353	2.00E-09
rs7160830	14	73139738	C	T	0.58	-0.01117	0.002007	2.70E-08
rs56031324	14	73324947	C	T	0.68	0.012123	0.002125	1.20E-08
rs12147298	14	79681303	A	G	0.8	-0.01366	0.00248	3.70E-08
rs4517716	14	83013876	C	G	0.81	-0.01379	0.002501	3.50E-08
rs12885815	14	88286403	T	G	0.72	-0.01217	0.002208	3.60E-08
rs1152428	14	91370371	A	G	0.33	-0.01159	0.002125	4.90E-08
rs740791	14	93699003	C	T	0.74	0.017506	0.002278	1.50E-14
rs10144067	14	93885198	C	T	0.41	-0.01857	0.002029	5.60E-20
rs11160502	14	99667179	G	A	0.57	0.011409	0.002028	1.80E-08
rs28527393	14	1.01E+08	T	C	0.88	-0.01705	0.003047	2.20E-08
rs7161194	14	1.02E+08	A	G	0.34	0.01892	0.002192	6.10E-18
rs73356862	14	1.02E+08	C	T	0.93	0.021276	0.0038	2.20E-08
rs10145749	14	1.03E+08	C	T	0.85	-0.01649	0.002808	4.20E-09
rs45517731	14	1.03E+08	G	A	0.96	-0.03317	0.005415	9.00E-10
rs11160745	14	1.04E+08	G	A	0.72	0.012311	0.002203	2.30E-08
rs4779891	15	31841860	C	T	0.53	-0.01192	0.001998	2.40E-09
rs10851975	15	35762649	C	A	0.15	-0.01512	0.00277	4.80E-08
rs112968109	15	41273750	A	G	0.98	0.036599	0.006493	1.70E-08
rs10775122	15	41898711	C	T	0.18	0.014198	0.002561	2.90E-08
rs2507375	15	46305384	A	T	0.56	-0.0115	0.002009	1.00E-08
rs1559677	15	47738063	A	G	0.6	-0.01165	0.002024	8.70E-09
rs2470193	15	51695735	A	T	0.78	-0.01327	0.002416	4.00E-08
rs10518694	15	53072673	C	A	0.86	-0.01588	0.002824	1.90E-08
rs77585789	15	55421487	T	C	0.98	0.036566	0.006656	3.90E-08
rs4774893	15	57106228	T	C	0.2	0.014028	0.002496	1.90E-08

rs2242063	15	58838575	G	A	0.85	-0.01585	0.00276	9.30E-09
rs340019	15	60905989	G	A	0.42	-0.0115	0.002014	1.10E-08
rs8026411	15	62117222	C	T	0.98	0.039607	0.006761	4.70E-09
rs56094562	15	63789186	A	C	0.65	0.011739	0.002089	1.90E-08
rs113182412	15	66503584	G	A	0.83	0.015726	0.002715	7.00E-09
rs12903168	15	67680209	T	C	0.73	0.019326	0.002234	5.10E-18
rs11072380	15	72974647	T	C	0.27	-0.015	0.002218	1.30E-11
rs112515238	15	73629077	C	T	0.95	0.028087	0.004573	8.10E-10
rs11636619	15	74135532	T	A	0.87	-0.01702	0.002986	1.20E-08
rs62009152	15	78001011	T	C	0.74	0.016444	0.002267	4.00E-13
rs7183818	15	79372413	T	C	0.56	0.013827	0.001997	4.40E-12
rs1484230	15	80978257	A	G	0.84	0.018153	0.002753	4.30E-11
rs186017271	15	83368605	G	A	0.98	-0.04504	0.008243	4.70E-08
rs62020775	15	89960286	T	A	0.86	0.016567	0.002864	7.20E-09
rs66615128	15	92561941	G	C	0.78	0.015624	0.002409	8.80E-11
rs7164271	15	95250820	C	A	0.58	0.011145	0.00202	3.40E-08
rs34633164	15	98299319	G	A	0.43	-0.01101	0.002005	4.00E-08
rs7173191	15	99227435	G	A	0.77	0.015167	0.00237	1.60E-10
rs432925	16	334580	G	C	0.72	0.014341	0.002221	1.10E-10
rs3211995	16	2089006	G	A	0.84	0.015057	0.002708	2.70E-08
rs8054140	16	3572694	G	T	0.73	-0.01302	0.002246	6.90E-09
rs2601773	16	4001898	C	A	0.5	-0.01279	0.00198	1.00E-10
rs7189135	16	4884368	G	C	0.53	-0.01093	0.001983	3.60E-08
rs12925281	16	6696455	C	G	0.25	-0.01265	0.002288	3.20E-08
rs8046562	16	8288575	A	T	0.46	0.010874	0.001991	4.70E-08
rs502032	16	9400995	T	C	0.29	-0.01203	0.002173	3.10E-08
rs12927792	16	9713194	C	T	0.57	-0.01195	0.002012	2.90E-09
rs72767578	16	19642670	G	A	0.88	0.022491	0.00308	2.90E-13
rs4997610	16	20229290	C	G	0.82	0.014304	0.002612	4.30E-08
rs4628982	16	20372795	C	G	0.38	0.013322	0.002042	6.80E-11
rs9932577	16	24512509	C	A	0.49	0.012752	0.001996	1.70E-10
rs2188717	16	24730230	T	C	0.19	-0.0159	0.002501	2.10E-10
rs112223196	16	28298418	A	C	0.76	-0.02029	0.002331	3.20E-18
rs34286592	16	29820480	C	T	0.85	-0.0179	0.002806	1.80E-10
rs62057232	16	30820866	T	C	0.61	0.021086	0.002025	2.20E-25
rs6500208	16	49011249	G	A	0.79	-0.01344	0.002452	4.20E-08
rs60380613	16	53555390	C	T	0.82	-0.01447	0.002578	2.00E-08
rs72803664	16	53784911	G	A	0.59	-0.01639	0.002044	1.10E-15
rs185004749	16	53830093	A	G	0.98	0.04073	0.007281	2.20E-08
rs62044676	16	62801840	A	C	0.52	0.011453	0.001984	7.70E-09
rs56372488	16	68339734	C	G	0.29	0.011936	0.002177	4.20E-08
rs5011579	16	69187318	C	G	0.28	-0.01403	0.002193	1.60E-10
rs12924872	16	69552215	C	T	0.53	0.020242	0.001998	4.10E-24
rs2287978	16	70180088	A	T	0.9	0.021821	0.003869	1.70E-08
rs11643673	16	71353719	G	A	0.62	-0.01134	0.002044	2.90E-08
rs34060407	16	72356419	A	G	0.91	-0.01997	0.003514	1.30E-08
rs756717	16	72996162	G	A	0.6	0.013529	0.002044	3.60E-11

rs825680	16	73606563	A	T	0.59	0.01119	0.002019	3.00E-08
rs8055786	16	76702763	C	T	0.82	-0.01407	0.00258	4.90E-08
rs4889364	16	81719115	G	A	0.75	-0.01264	0.002282	3.10E-08
rs11150461	16	82448195	C	G	0.27	0.013036	0.002229	5.00E-09
rs77081114	17	1816762	G	A	0.83	0.017624	0.002659	3.40E-11
rs72817602	17	2123328	G	A	0.72	0.013174	0.002199	2.10E-09
rs9635707	17	4724124	G	A	0.48	0.011387	0.00201	1.50E-08
rs2242449	17	7095507	C	T	0.57	-0.01219	0.002018	1.50E-09
rs2324082	17	15868291	G	A	0.47	-0.01279	0.002044	3.90E-10
rs731870	17	21122322	A	G	0.6	0.011356	0.002019	1.90E-08
rs1017529	17	27912415	C	A	0.83	-0.01481	0.002654	2.40E-08
rs12450446	17	31433129	C	T	0.6	0.011209	0.002034	3.60E-08
rs9904602	17	34835526	T	A	0.48	-0.01508	0.001984	3.00E-14
rs16966801	17	39573713	A	G	0.8	-0.01382	0.00249	2.90E-08
rs4473241	17	42281282	G	T	0.71	-0.01271	0.002197	7.20E-09
rs80226508	17	45958054	T	C	0.96	-0.03107	0.005155	1.70E-09
rs17617360	17	46077099	A	G	0.93	0.023477	0.003901	1.80E-09
rs8065986	17	46213674	T	C	0.03	0.031508	0.005579	1.60E-08
rs4643373	17	47123423	T	C	0.7	0.019579	0.002162	1.40E-19
rs62072006	17	52938468	A	C	0.86	-0.01565	0.002824	3.00E-08
rs2586222	17	55547695	A	G	0.16	0.015017	0.00268	2.10E-08
rs76219208	17	56065983	C	T	0.91	-0.01898	0.003477	4.80E-08
rs72845886	17	61666687	C	T	0.94	0.028025	0.004259	4.70E-11
rs4791129	17	65771281	C	G	0.21	0.013918	0.002441	1.20E-08
rs4467142	17	71126631	G	A	0.52	0.01134	0.001987	1.20E-08
rs7209235	17	73759552	G	A	0.3	0.012074	0.002176	2.90E-08
rs9897720	17	78438307	T	C	0.12	-0.01698	0.003093	4.00E-08
rs9895151	17	79048382	T	C	0.74	-0.0125	0.002253	2.90E-08
rs62078746	17	80053590	G	A	0.45	0.010896	0.001991	4.40E-08
rs8084696	18	1819543	G	T	0.85	-0.01856	0.002804	3.60E-11
rs479163	18	7536612	C	T	0.83	0.014905	0.002656	2.00E-08
rs35761930	18	13182325	A	T	0.81	-0.01471	0.00257	1.00E-08
rs9948870	18	20967065	G	A	0.61	0.011582	0.002034	1.20E-08
rs2156774	18	22136195	C	A	0.82	0.016938	0.002589	6.00E-11
rs7228141	18	31214950	G	C	0.46	-0.01173	0.001989	3.70E-09
rs1025206	18	36125658	G	A	0.24	0.013106	0.002329	1.80E-08
rs7237444	18	39468982	G	A	0.33	0.012068	0.002149	2.00E-08
rs8087199	18	40674041	A	G	0.41	-0.01137	0.002016	1.70E-08
rs11664848	18	42575661	C	G	0.34	-0.0126	0.002098	1.90E-09
rs16978350	18	42940499	G	T	0.73	0.01361	0.002258	1.70E-09
rs17785419	18	44765469	G	A	0.57	0.010941	0.002005	4.80E-08
rs7239114	18	45921214	G	A	0.46	-0.01223	0.002002	1.00E-09
rs7243172	18	52472235	G	T	0.46	0.013388	0.002001	2.20E-11
rs784234	18	53422907	G	A	0.18	-0.01457	0.00257	1.40E-08
rs9957145	18	56876228	G	A	0.83	0.017938	0.002654	1.40E-11
rs57940982	18	57747471	A	G	0.88	0.022618	0.003071	1.80E-13
rs9956907	18	57921433	A	T	0.46	-0.01486	0.001987	7.60E-14

rs948811	18	58105490	G	A	0.55	-0.01168	0.001998	5.10E-09
rs12454712	18	60845884	T	C	0.62	-0.01287	0.002042	3.00E-10
rs1373349	18	63282992	C	T	0.32	0.01445	0.002135	1.30E-11
rs8089514	18	69224478	T	A	0.63	-0.01299	0.002076	3.90E-10
rs12151205	19	1808569	T	A	0.45	-0.01108	0.002027	4.60E-08
rs10419634	19	1936672	T	C	0.29	-0.01212	0.002213	4.30E-08
rs79712071	19	2221892	C	A	0.95	-0.02671	0.004769	2.10E-08
rs892128	19	3975487	G	A	0.2	-0.01582	0.002516	3.20E-10
rs139333331	19	5268055	C	T	0.97	-0.03698	0.006688	3.20E-08
rs1865124	19	10878144	C	T	0.92	-0.02069	0.003662	1.60E-08
rs6511826	19	12706991	G	A	0.09	0.019799	0.003545	2.30E-08
rs897751	19	18193349	A	G	0.56	0.011052	0.002016	4.20E-08
rs9636202	19	18449238	G	A	0.73	0.017151	0.002248	2.40E-14
rs13345612	19	18813405	A	G	0.79	0.014049	0.002451	1.00E-08
rs4808855	19	18874202	T	C	0.62	0.014477	0.002046	1.50E-12
rs35824797	19	19456264	C	T	0.92	-0.02329	0.003696	3.00E-10
rs7247004	19	30240852	A	G	0.69	-0.01338	0.002143	4.30E-10
rs8110509	19	30981639	C	A	0.78	0.014066	0.002432	7.30E-09
rs112726905	19	32822348	A	G	0.73	0.012812	0.002247	1.20E-08
rs10402950	19	33935675	T	C	0.71	-0.01355	0.002187	5.70E-10
rs185350	19	34306816	C	T	0.5	-0.013	0.001986	5.90E-11
rs147711004	19	45337918	G	A	0.96	0.032834	0.005421	1.40E-09
rs7412	19	45412079	C	T	0.92	-0.0204	0.00365	2.30E-08
rs150966173	19	45421204	C	T	0.97	0.033795	0.006035	2.10E-08
rs62118504	19	45734751	A	G	0.6	-0.01148	0.002035	1.70E-08
rs1007204	19	46480155	G	A	0.69	-0.01267	0.002151	3.90E-09
rs10404135	19	47541832	C	T	0.86	0.018301	0.002922	3.80E-10
rs9797777	19	47547693	A	G	0.1	-0.02538	0.003365	4.70E-14
rs2232003	19	49621964	T	C	0.21	0.01386	0.002454	1.60E-08
rs78081759	19	51130909	G	A	0.93	-0.02205	0.004024	4.20E-08
rs34681424	19	51640330	C	G	0.89	0.019542	0.003462	1.70E-08
rs6046747	20	2075533	A	G	0.51	0.010915	0.001997	4.60E-08
rs6077004	20	6442961	G	A	0.73	0.013292	0.002248	3.40E-09
rs73898513	20	15806210	C	T	0.88	-0.0176	0.003067	9.60E-09
rs852042	20	17091233	A	G	0.24	0.013121	0.002313	1.40E-08
rs226687	20	24775222	A	T	0.43	-0.01105	0.002001	3.40E-08
rs7453	20	25207074	T	C	0.55	-0.01157	0.00199	6.00E-09
rs703755	20	26214633	A	G	0.03	-0.03306	0.005708	7.00E-09
rs6061054	20	29811317	T	G	0.03	-0.03071	0.005627	4.80E-08
rs6142046	20	32514061	C	T	0.42	-0.0123	0.002017	1.10E-09
rs4812405	20	35276585	C	A	0.92	0.020516	0.003719	3.50E-08
rs16989232	20	39291784	G	A	0.6	-0.01229	0.002044	1.80E-09
rs4369924	20	41954383	G	A	0.84	0.015584	0.002704	8.30E-09
rs2425803	20	44876902	C	T	0.57	-0.01129	0.002009	1.90E-08
rs4809724	20	47355462	G	A	0.78	0.013379	0.002401	2.50E-08
rs34248912	20	50752096	G	T	0.9	0.02197	0.00341	1.20E-10
rs80150487	20	50888333	G	A	0.93	0.020926	0.003801	3.70E-08

rs6091982	20	53441684	A	C	0.27	0.01298	0.002311	1.90E-08
rs2247627	20	54145086	G	A	0.66	-0.01195	0.002103	1.30E-08
rs11699828	20	62157198	G	A	0.96	0.033542	0.005827	8.60E-09
rs17193211	21	38885506	C	T	0.93	0.024004	0.004035	2.70E-09
rs11702843	21	40123740	G	A	0.74	-0.01263	0.002289	3.50E-08
rs13053080	21	40312207	T	C	0.58	0.012062	0.00201	2.00E-09
rs62222988	21	40569508	T	C	0.63	-0.01178	0.002053	9.50E-09
rs2410204	21	41416838	A	G	0.59	-0.01114	0.002019	3.40E-08
rs2837992	21	42620520	T	C	0.37	-0.01246	0.002058	1.40E-09
rs111460281	21	46437156	G	A	0.96	0.03037	0.005211	5.60E-09
rs8130074	21	46498684	C	G	0.35	0.016426	0.002079	2.80E-15
rs140733155	21	48048773	A	G	0.99	-0.05293	0.009569	3.20E-08
rs34425639	22	18123806	G	A	0.8	-0.01395	0.002459	1.40E-08
rs165722	22	19949013	C	T	0.48	-0.01093	0.001997	4.40E-08
rs1807579	22	40528220	T	C	0.8	0.018985	0.002486	2.20E-14
rs136393	22	41567535	G	T	0.28	-0.01214	0.00221	3.90E-08
rs9615723	22	48386670	C	T	0.44	0.011825	0.002024	5.20E-09
rs713887	22	48870888	G	C	0.58	-0.01212	0.002017	1.80E-09
rs909691	22	50709495	A	G	0.52	-0.01097	0.002003	4.30E-08

Current smoking SNPs (after clumping)

SNP	CHR	BP	effect_allele	other_allele	EAF	BETA	SE	P_VALUE
rs2782640	1	44009033	C	T	0.38	-0.00644	0.001176	4.30E-08
rs4074442	2	22554114	G	A	0.62	-0.00641	0.001173	4.60E-08
rs1169274	2	45112453	G	A	0.72	-0.00706	0.001281	3.50E-08
rs5595004	2	57943869	G	A	0.96	-0.01675	0.003053	4.20E-08
rs3087898	2	61765074	G	A	0.58	0.006415	0.001152	2.60E-08
rs1130675	2	1.06E+08	C	T	0.87	-0.00952	0.001709	2.50E-08
rs7286174	2	1.46E+08	C	T	0.75	0.007328	0.001315	2.50E-08
rs4955411	3	49145304	A	G	0.22	0.007517	0.00137	4.10E-08
rs368450	4	35412434	T	C	0.82	-0.00875	0.001474	2.90E-09
rs969512	4	1.48E+08	A	T	0.67	0.006768	0.001207	2.00E-08
rs329118	5	1.34E+08	C	T	0.58	0.006628	0.001154	9.30E-09
rs5804099	5	1.66E+08	G	C	0.54	-0.00676	0.001145	3.50E-09
rs4868800	5	1.67E+08	G	T	0.42	0.006966	0.001162	2.00E-09
rs6980093	7	1.14E+08	G	A	0.4	-0.0064	0.001168	4.20E-08
rs6968125	7	1.15E+08	C	T	0.51	0.007568	0.001145	3.90E-11
rs1025277	7	1.17E+08	T	G	0.68	-0.00676	0.001228	3.70E-08
rs1026840	7	1.53E+08	T	C	0.52	-0.00629	0.001139	3.30E-08
rs1178047	8	27344719	G	A	0.94	0.01357	0.00235	7.70E-09
rs2740792	8	91997679	A	G	0.27	0.007217	0.001285	2.00E-08
rs4543592	9	3014254	T	C	0.52	-0.0063	0.001141	3.40E-08
rs589292	9	1.28E+08	C	T	0.69	0.00732	0.001231	2.70E-09
rs2867516	9	1.36E+08	T	G	0.86	-0.0107	0.001687	2.30E-10
rs2675628	10	63557648	C	T	0.48	0.006382	0.001138	2.00E-08
rs1224171	10	1.04E+08	C	A	0.71	-0.00766	0.001252	9.70E-10
rs1159621	10	1.06E+08	G	A	0.59	0.006411	0.001169	4.10E-08
rs1083272	11	17040418	C	A	0.72	0.006982	0.00128	4.90E-08
rs1447481	11	1.13E+08	C	T	0.53	0.006629	0.00114	6.00E-09
rs1243712	14	77485409	C	T	0.58	-0.00639	0.001159	3.50E-08
rs2371105	14	80333102	A	T	0.09	-0.01127	0.001998	1.70E-08
rs1289465	14	1.04E+08	G	A	0.66	-0.00673	0.001212	2.80E-08
rs7169820	15	47501160	G	T	0.61	-0.00643	0.001164	3.40E-08
rs7602254	15	80937663	C	T	0.77	0.007949	0.001347	3.60E-09
rs1452787	18	53207207	A	G	0.72	-0.00705	0.001271	2.80E-08
rs4803373	19	41326426	C	G	0.41	0.00657	0.001169	1.90E-08
rs1845896	19	41412192	T	C	0.98	-0.02664	0.004626	8.50E-09
rs4546199	20	61983901	G	A	0.92	-0.01468	0.002094	2.40E-12
rs5995992	22	41487218	T	C	0.71	0.006923	0.001259	3.80E-08